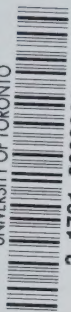


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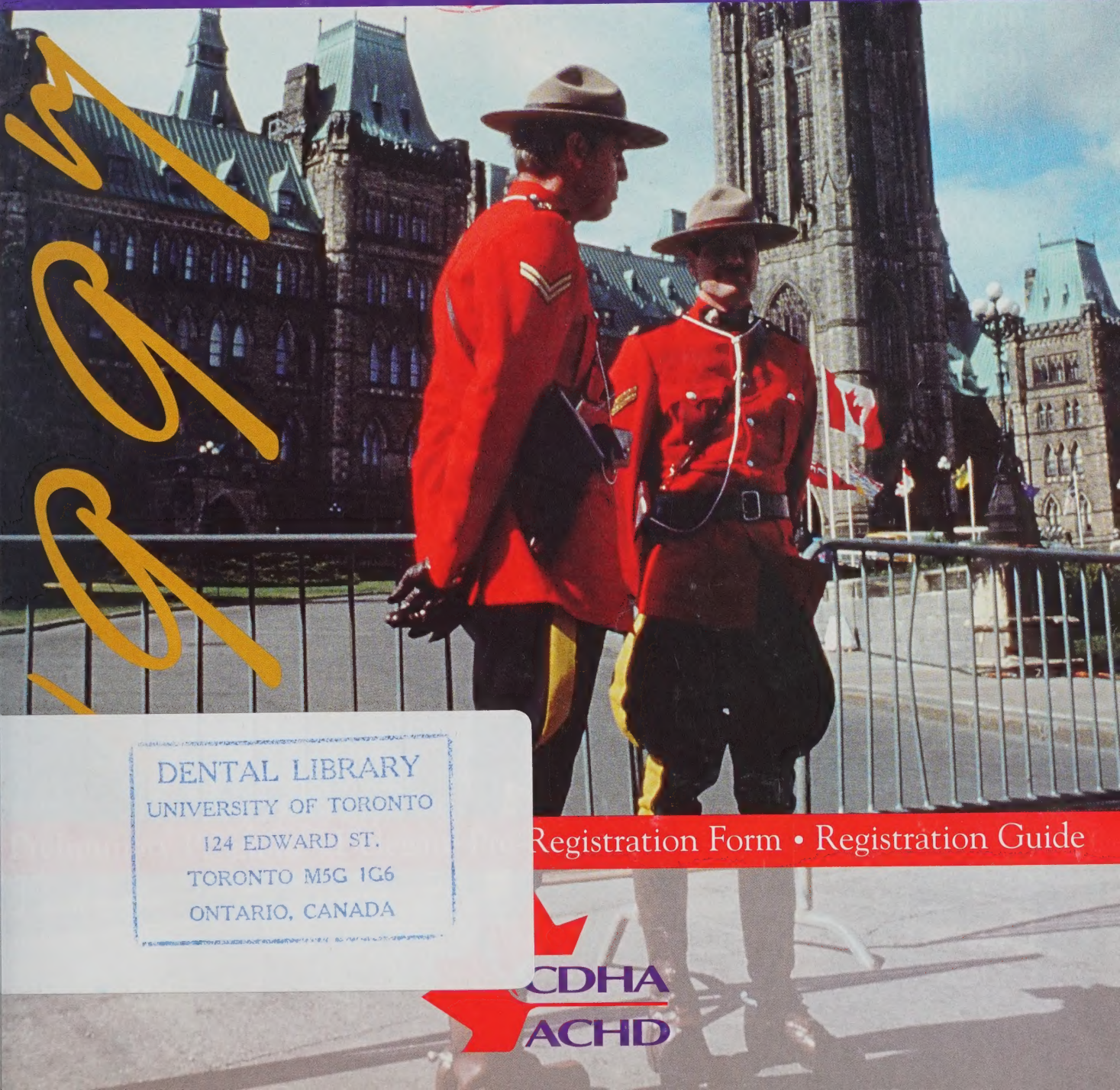
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de l'association canadienne des hygiénistes dentaires

January/February 1997 vol. 31 no. 1

CDHA's 8th Annual Professional Conference Preview



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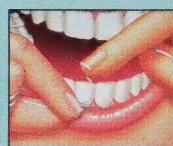
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Two officers of the Royal Canadian Mounted Police, in front of the Peace Tower at the Parliament Buildings in Ottawa.



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"An Investigation of Dental Hygiene Treatment Fear"

"Infection Control Protocols for Exposing and Processing Radiographs"

Prepared by Carol Barr Overholt, Dip.D.H.

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JUNE 27-29, 1997

THE WESTIN HOTEL, OTTAWA

The Westin Hotel will honour the special room rate for two days before and after the conference, so **RESERVE EARLY!** The cut-off date is May 22, 1997. See page 29 in this issue for information on how to register.

PRE- AND POST-CONFERENCE SESSIONS

**FRIDAY, JUNE 27, 1997 (9:00 a.m.–12:00 noon)
or SUNDAY, JUNE 29, 1997 (2:00–5:00 p.m.)**

Cardio-Pulmonary Resuscitation (Recertification) with Lori Maughan
Lori is a registered nurse who teaches CPR at the Ottawa Civic Hospital. This is a wonderful opportunity for dental hygienists to update their CPR training. The cost includes booklet, handouts and use of dolls. **Cost: \$25.00 each**

CONFERENCE SESSIONS

FRIDAY, JUNE 27, 1997

- 1:00–1:45** Official Opening
- 1:45–3:45** "Let's Talk" with Mike Carbone
This presentation will take place in a night-time talk show format with guest speakers discussing the latest trends and changes in the profession of dental hygiene.
- 3:45–4:00** Break
- 4:00–5:00** "Profile—Water Contamination in Dental Units" with Dr. Alex Penner—*Sponsored by Oasis Dental*
This presentation will discuss the science and possible solutions to water contamination in dental units with attention drawn to the ultrasonic handpiece.
- 6:30–9:00** President's Reception
All registrants are encouraged to join the CDHA President, executive and board of directors for an evening of food, drinks, magic and fun.

P.M. SESSIONS

- "Ultrasonics Revisited" with Sylvie Martel
(French session—3 hours) —*Sponsored by Dentsply Canada*
This hands-on workshop on new debridement techniques is limited to 40 persons. Practical knowledge that you can implement in your daily practice immediately.
- "Dental Anxiety—The Practitioner and the Client" with Laura Dempster (1.5 hours)
This presentation will discuss the complexities of, and how to ensure the proper diagnosis, management and treatment of dental anxiety that our clients present.
- "Developing Critical Appraisal Skills: Knowing What to Read and How to Read it" with Laura Dempster (1.5 hours)
This presentation will aim to demystify the world of research by discussing qualities of good scientific articles to enable one to decipher fact from fiction.

SUNDAY, JUNE 29, 1997

- 7:00–8:30** Continental Breakfast (If sponsored)

A.M. SESSIONS

- "Using Critical Appraisal Skills to Decipher Scientific Articles" with Laura Dempster (3 hours)
It will provide further background in developing critical appraisal skills and actively involve participants in reviewing clinically relevant scientific articles. The participants will be mailed material to be reviewed in preparation for this session. This workshop requires pre-registration.
- "Blood-Born Pathogens" with Carolyn Kenneally (1.5 hours)
Carolyn is the Infection Control Officer for the Children's Hospital of Eastern Ontario. She will update us with the latest information on blood-born pathogens.
- "Clinical Application of Ultrasonics" with Nancy Keselyak (3 hours)—*Sponsored by Dentsply Canada*
Repeat of the Saturday session. Limited to 40 persons.
- "Effective Communication and Marketing for Health Care Professionals" with Marg Archibald of the Monday Communications Group (4 hours)—*Sponsored by the College of Dental Hygienists of Ontario*
Continuation of Saturday session.
- "Community Connections" with Donna Bowes
Topics to be announced.
- "All Clefts Great and Small" with Dale Scanlan (1–1.5 hours)
The ever-changing approach to the cleft lip and palate phenomena from a twenty-year perspective.
- "Oral Cancer" with Dr. Jack Newton (2 hours)
Dr. Newton works in the dental department of the Ottawa Civic Hospital, dealing with oral oncology patients.

SATURDAY, JUNE 28, 1997

- 7:00–8:30** Continental Breakfast (If sponsored)

The start and finish times of the presentations will be staggered to make lunch and the viewing of commercial exhibits less congested.

ALL-DAY SESSIONS

- "Effective Communication and Marketing for Health Care Professionals" with Marg Archibald of the Monday Communications Group—*Sponsored by the College of Dental Hygienists of Ontario*
- "The Periodontium: Its Treatment and Repair" with Marilyn Goulding—*Sponsored by Dentsply Canada*

A.M. SESSIONS

- "Clinical Application of Ultrasonics" with Nancy Keselyak (3 hours)—*Sponsored by Dentsply Canada*
This hands-on workshop on new debridement techniques is limited to 40 persons. Learn the implications of recent changes on modern dental hygiene practice.
- "Blood-Born Pathogens" TBA (French session—1.5 hours)
This presentation will be an update by the Infection Control Officer from either the Ottawa General Hospital or the Children's Hospital of Eastern Ontario.

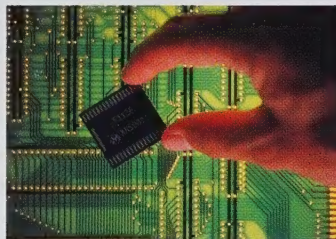
Free Papers

- 10:00–3:00** Commercial Exhibits
Lunch will be served in the exhibit hall.

- 12:00–2:00** Awards Luncheon
An opportunity for all of the registrants to unwind and chow down!



Canadian Science and Technology Growth Fund Inc.

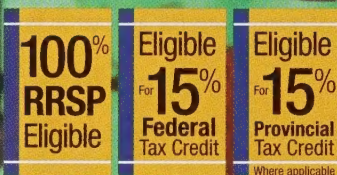


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CDHA'S 8TH ANNUAL PROFESSIONAL CONFERENCE

Dental Hygienists: Professionals Coast to Coast

DELEGATE PRE-REGISTRATION FORM

Payment must accompany the completed registration form. Please make a copy for your files.

Last Name _____ First Name _____

Preferred Mailing Address _____

City _____ Province _____ Postal Code _____

CDHA I.D. Number _____ Tel. (home) _____ Tel. (work) _____

PRE- AND POST-CONFERENCE PROGRAMS

Registrants for these programs must be registered for at least one day of the conference proper.

Cardio-Pulmonary Resuscitation (Recertification) with Lori Maughan

1. Friday, June 27, 1997 (9:00 a.m.–12 noon) Fee: **\$25.00** (GST included) per person

☐ \$ _____

2. Sunday, June 29, 1997 (2:00 p.m.–5:00 p.m.) Fee: **\$25.00** (GST included) per person

☐ \$ _____

CONFERENCE REGISTRATION

REGISTRATION FEE STRUCTURE (GST INCLUDED)	Full Registration ¹		Daily Registration ²		
	Early Bird	After May 22	Early Bird	After May 22	Indicate Day(s)
CDHA MEMBER	\$215	\$265	\$100/day	\$130/day	Fri ____ Sat ____ Sun ____
NON-MEMBER (Hygienist)	\$400	\$450	\$150/day	\$180/day	Fri ____ Sat ____ Sun ____
Allied Health Professional³	\$265	\$300	\$130/day	\$150/day	Fri ____ Sat ____ Sun ____
STUDENT MEMBER					
no meals	n/c	n/c	n/c	n/c	
with meals/Friday Reception	\$100	\$130	\$40/day	\$50/day	Fri ____ Sat ____ Sun ____

\$ _____

SUBTOTAL
of all selected dates

\$ _____

TOTAL
(add all above)

1. Full Registration includes access to Friday reception, scientific sessions for conference proper, exhibits, breaks and luncheons.

2. Daily Registration includes the following:
 Friday: scientific sessions for conference proper, break, evening reception;
 Saturday: scientific sessions, lunch, exhibits;
 Sunday: breakfast, scientific sessions, Awards Luncheon.

3. Providing you are a member of your national professional association.

ADVANCE REGISTRATION ENDS JUNE 6, 1997. AFTER THIS DATE PARTICIPANTS MAY ONLY REGISTER ON-SITE AT THE WESTIN HOTEL, OTTAWA.

LIMITED ATTENDANCE WORKSHOPS *(Advance registration is required, and can be arranged by telephone only, at 1-800-267-5235.) Available to registrants at no additional cost.*

1. "Clinical Application of Ultrasonics" with Nancy Keselyak

a) Saturday, June 28, 1997 (a.m.)—3 hours

Attendance limited to first **40** registrants

☐

b) Sunday, June 29, 1997 (a.m.)—3 hours

Attendance limited to first **40** registrants

☐

2. "Ultrasonics Revisited" with Sylvie Martel *en français*

Saturday, June 28, 1997 (p.m.)—3 hours

Attendance limited to first **40** registrants

☐

3. "Using Critical Appraisal Skills to Decipher Scientific Articles" with Laura Dempster

Sunday, June 29, 1997 (a.m.)—3 hours

Attendance limited to first **40** registrants

☐ over →

Materials to be mailed to registrants in advance to allow for participant preparation.



CDHA'S 8TH ANNUAL PROFESSIONAL CONFERENCE

Dental Hygienists: Professionals Coast to Coast

DELEGATE PRE-REGISTRATION FORM (cont.)

GENERAL INFORMATION FOR CONFERENCE PARTICIPANTS

EARLY BIRD DRAW

Registrations received prior to **May 22, 1997** are eligible to win either free registration to the conference proper or one free night accommodation at the Westin Hotel.

CANCELLATION POLICY

If cancellation notice is received in writing **prior to May 22, 1997**, a refund less \$25.00 administration fee will be issued. **After May 22, 1997**, a 50 per cent refund will be issued. No refunds will be issued **after June 6, 1997**.

** It is the registrant's responsibility to contact their provincial licensing body to verify applicable continuing education points and determine acceptable "proof of attendance" required.*

SPECIAL NEEDS

- ☐ Vegetarian
- ☐ Special Needs—i.e. hearing impaired, wheelchair access etc. (please check here and a member of our Registration Staff will contact you to verify details)
- ☐ Food Allergies: _____

METHOD OF PAYMENT

- ☐ Cheque (made payable to CDHA) Post-dated cheques **will not** be accepted
- ☐ Money Order
- ☐ VISA ☐ MasterCard # _____ Expiry Date: _____
- Name of cardholder if different than registrant _____ **TOTAL \$** _____

HOTEL/TRAVEL INFORMATION

CDHA has reserved a room block at the Westin Hotel for conference participants. Hotel accommodation arrangements are the responsibility of the registrant. Call the Westin Hotel at (613) 560-7000 or 1-800-228-3000, or fax them at (613) 560-7359. Westin Hotel Ottawa, 11 Colonel By Drive, Ottawa, ON, K1N 9H4.

CDHA has appointed Uniglobe Premiere of Ottawa as its official travel agency. Call the Convention Department at 1-800-267-9372 to make your travel arrangements or call the Conference's Official Carrier, Air Canada, directly at 1-800-361-7585 to book your travel. Please quote **CV#972898** to identify yourself as a participant of the CDHA Annual Conference.

ROOM RATES:

\$135 Single/double occupancy per night—medium room

\$155 Single/double occupancy per night—deluxe room

\$195 Single/double occupancy per night—junior suite

All rates quoted are subject to applicable federal, provincial and municipal taxes.

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Health Canada Position Statement on Dental Amalgam

Considerations:

1. Although dental amalgam is the single largest source of mercury exposure for average Canadians, current evidence does not indicate that dental amalgam is causing illness in the general population. However, there is a small percentage of the population which is hypersensitive to mercury and can suffer severe health effects from even a low exposure.
2. A total ban on amalgam is not considered justified. Neither is the removal of sound amalgam fillings in patients who have no indication of adverse health effects attributable to mercury exposure.
3. As a general principle, it is advisable to reduce human exposure to heavy metals in our environment, even if there is no clinical evidence of adverse health effects, provided the reduction can be achieved at reasonable cost and without introducing other adverse effects.

Recommendations:

Health Canada advises dentists to take the following measures:

1. Non-mercury filling materials should be considered for restoring the primary teeth of children where the mechanical properties of the material are suitable.
2. Whenever possible, amalgam fillings should not be placed in or removed from the teeth of pregnant women.
3. Amalgam should not be placed in patients with impaired kidney function.
4. In placing and removing amalgam fillings, dentists should use techniques and equipment to minimize the exposure of the patient and the dentist to mercury vapor, and to prevent amalgam waste from being flushed into municipal sewage systems.
5. Dentists should advise individuals who may have allergic hypersensitivity to mercury to avoid the use of amalgam. In patients who have developed hypersensitivity to amalgam, existing amalgam restorations should not be replaced with another material where this is recommended by a physician.
6. New amalgam fillings should not be placed in contact with existing metal devices in the mouth such as braces.
7. Dentists should provide their patients with sufficient information to make an informed choice regarding the material used to fill their teeth, including information on the risks and benefits of the material and suitable alternatives.
8. Dentists should acknowledge the patient's right to decline treatment with any dental material.

Midland-Walwyn Report: Retirement Realities

Your retirement years should be worry-free. They are an opportunity to enjoy the fruits of your labour, and the precious gift of time. During your prime working years, you must make plans to save for your retirement, and the financial choices and priorities you make during this time will dramatically impact your retirement plans. Subsequently, the decisions you make today will affect your security and lifestyle tomorrow.

Registered Retirement Savings Plans are the key to controlling your financial future. Using an RRSP helps you to enjoy the long-term benefits of accumulating wealth free from taxation. Today, it is a well-accepted financial planning priority that every Canadian taxpayer has an RRSP. After all, did you realize that, for many of you, approximately one-third of your lives will be spent in the retirement phase?

By increasing RRSP contribution limits and establishing the carry-forward provision, the Government of Canada is encouraging individual Canadians to prepare for a self-sufficient retirement.

The government is sending us a message, and we must heed it: More and more, the onus is on the individual to plan for their retirement income.

A comfortable lifestyle in retirement doesn't happen by accident. It requires a commitment to planning, saving, and ongoing investment management. Taking stock of where you are today, contributing an annual amount of savings and getting sound investment advice are not tasks you should embark on alone. With sound advice from a Financial Advisor, you should be able to look into the future with the peace of mind that you will be secure in your retirement years.



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CDHA Present at First Annual Conference of the Canadian Association for Community Care

Between October 27-29, CDHA President, Sue MacIntosh, was in Halifax to attend the first Annual Conference of the newly-formed Canadian Association for Community Care (CACC). The theme for the conference was, "Ready, Willing & Able... Our Community Response to Health Care Needs".

The Canadian Long Term Care Association (CLS) and Home Support Canada (HSC) began operating jointly under the name Canadian Association for Community Care on the basis of a merger agreement signed by both associations. The goals of the newly-formed CACC are the development of a range of accessible, high quality and flexible community care services in the context of a "seamless continuum" of health care in Canada. The new association will support this continuum while recognizing and acknowledging the value, differences and contributions of the different aspects of community care delivered in the home, long term care facilities and through community support programs.

Delegates were full of enthusiasm and excitement as this was the first time that many of them had been able to share the common ground of the previously separate groups. This first meeting proved to be a successful forum to discuss future liaisons and growth in community health care.

Work is presently underway to develop Home Care Standards and to assess the role of these standards in future accreditation. Several of the workshops explored the issues surrounding standards and the need for a nationwide accreditation process.

For CDHA, it proved to be an excellent opportunity to network directly with a segment of the health care industry that is recognizing the need for greater attention to the oral care of a healthier aging population. As we see the practice settings of dental hygienists in some provinces broaden to include long term care facilities and home support programs, such networking with other health disciplines provides valuable enrichment of the caring environment.

13

HEAL Calls for Re-Investment in Health

(Ottawa—19 November 1996) In submitting its pre-budget brief to the House of Commons Standing Committee on Finance, the Health Action Lobby (HEAL), a coalition of 27 national health and consumer organizations (of which the CDHA is a member), called on the government to show leadership in health care by ceasing immediately from implementing further cuts to health care funding.

"This government has made repeated claims that medicare is a sacred trust that will be defended, but it has done little to demonstrate this commitment," said HEAL co-chair, Dr. Mary Ellen Jeans. "The government cut \$2.5 billion from the Canada Health and Social Transfer (CHST) this year, another \$4.5 billion will be cut in 1997, and another \$1.4 billion in the following two years. The health care system cannot sustain these cuts—Canadians cannot sustain these cuts."

HEAL's brief provides examples of the detrimental effects that previous cuts to health care have had on Canadian's lives, and the

burden that this is creating for Canadian families. The health care system has not had the opportunity to adjust to the recurrent fiscal shocks, and providers are finding it difficult to provide safe care.

HEAL recommends that under no circumstances should the floor for cash payments fall below next year's planned level of \$12.5 billion.*

HEAL co-chair Sharon Sholzberg-Gray stated, "Provision of modest additional resources, within the brighter fiscal outlook, would not only help secure the principles of the Canada Health Act, but also improve the scope for federal-provincial co-operation in a number of priority areas such as children's health."

* As a member of the HEAL alliance, the Canadian Medical Association is not a signatory to this document as it has submitted a separate brief to the House of Commons Standing Committee on Finance.

International Federation of Dental Hygienists Celebrates 10th Anniversary



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of
Dental Hygienists**

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By Carolyn C. King, Dip.D.H., B.D.Sc. Candidate (UBC)

and Bonnie J. Craig, Dip.D.H., M.Ed. (Assistant Professor and Director, B.D.Sc. Program, UBC)

Reconnecting the Mouth to the Body

Introduction

As health professionals, dental hygienists understand how oral health contributes to general health and personal well-being, as well as the implications of oral disease to individuals and the community. Dental hygienists are advocates for oral health and strive to educate the public, health policy makers and other health care professionals to help them understand the benefits of oral health. However, the importance of oral health and disease prevention is not yet well understood or valued by society at large. The public and many who control health care resources do not fully understand the significance of oral health to overall health and well-being.¹ A survey by Health and Welfare Canada reported that 70 percent of Canadians did not know whether better oral health would improve their health status.² Isman³ concluded that other health care professionals tend to be undereducated with respect to oral health. The purpose of this literature review is to verify that oral health is an integral part of general health. The mouth needs to be reconnected with the rest of the body.

Prevalence of Oral Diseases

Oral diseases and their consequences, including dental caries, periodontal disease, oral cancer and tooth loss, are among the most prevalent of all chronic health conditions. According to a 1986-97 survey done by the National Institute of Dental Research, 89 percent of all American children experienced tooth decay by the time they graduated from high school.⁴ By middle age, adults have had more than half of their teeth affected by caries.⁵ In the U.S., 60 percent of 14-17 year olds showed evidence of bleeding gums⁶ and 40 to 70 percent of adults (depending upon the age group) had periodontal disease.⁷ Oral cancer kills more Americans every year than cervical cancer.¹⁰ In Canada, in regional studies conducted in 1986, 88 percent of older adults demonstrated the need for treatment of periodontal disease.⁸ One-third or more of Canadian adults over the age of 65 had lost all their teeth.⁸ Cancer statistics in 1992 indicated that one in 50 cancer deaths in Canada were due to oral cancer.⁹ Five-year survival rates for oral cancer were poor.

Prevention of Oral Diseases

Perhaps the greatest irony surrounding the widespread prevalence of oral diseases is that these diseases are comparatively easy and inexpensive to prevent. The old adage an ounce of prevention is worth a pound of cure is true for oral health initiatives. Prevention works. Dental research has led to the development of an extensive range of cost effective preventive procedures. The use of fluorides and enamel sealants to prevent caries in children is well documented.¹¹ Preventing plaque accumulation can prevent gingivitis and periodontitis.¹² Early detection of oral cancer can increase survival rates and limit severe disfigurement.¹⁰ Oral cancer, is a threat to health, not just to oral health.

Early Detection of Oral Diseases

The oral cavity often mirrors the rest of the body, exhibiting signs and symptoms of more serious health problems.¹² Oral health professionals are often the first to detect changes in the mouth which may be indications of human immuno-deficiency virus (HIV) infection.¹³ This early detection helps ensure that infected individuals are referred for appropriate treatment. Through early detection and intervention the risk of HIV transmission is reduced, and HIV infected individuals are given access to early treatment and therapy. Early detection and treatment of oral diseases can prevent further destruction of oral tissues. The two most prevalent oral diseases, dental caries and periodontal disease, are bacterial infections that can be prevented, controlled, or treated.

Relationship of Oral Health to Quality of Life

Concepts and definitions of health have broadened in recent years. The World Health Organization defines health as the state of physical, mental and social well-being and not merely the absence of disease or infirmity.¹⁴ Issues of comfort, quality of life, and the ability to be a productive member of society all relate to one's health. The effects of oral disease go beyond pain, discomfort and dysfunction. The individual may be affected economically as well as psychologically. In the U.S. in 1989, 20 million working days and 51 million school hours were lost because of dental conditions.¹⁵ In Canada, 15 percent of adults reported that oral pain had had some effect on their daily lives in the past four weeks, and 1.7 percent had taken time off work because of oral pain within the previous month.¹⁶ Locker¹⁷ found in one survey that 47.1 percent of individuals 75 years old and over reported problems with eating and communication due to oral conditions. Respondents reported avoiding eating with others, or being embarrassed by the appearance of their teeth or mouth. In a study of 58 nursing home residents, Karuza *et al*¹⁸ measured self-esteem. Results indicated that poor oral function was significantly related to decreased self-esteem. While there is much to be learned about oral health and its impact on quality of life issues, it is already clear from these examples that some relationships exist.

The Oral Cavity and Its Relationship to the Body

Oral health professionals should routinely review a standard detailed medical history prior to the delivery of dental care. Many systemic conditions such as viral diseases, tuberculosis, syphilis, lichen planus, pemphigus, autoimmune diseases, endocrine disturbances, allergies, HIV infection and the side-effects of medications can manifest in the oral cavity and serve as indicators of more serious health problems.¹² An area less frequently studied, is the relationship in the reverse direction, the effect that oral infections or dysfunctions may have on general health. The relationship between oral health

and dental health has been studied most extensively among patients at risk for infectious endocarditis (IE) and immuno-compromised patients. As IE is commonly associated with dental flora and dental treatment,¹⁹ it has become routine to prophylactically premedicate patients at risk for IE prior to dental treatment. Episodes of IE have been reported to have occurred other than during professional dental treatment.²⁰ Reports have indicated that IE has been caused by oral conditions such as denture sores^{21, 22} as well as associated with the use of a home oral irrigator.²³

A literature review by Limeback²⁴ suggests a possible link may exist between oral infections and respiratory infections. This link may be due to the similarity of gram-negative bacilli found in both periodontal disease and lower respiratory infections. The presence of periodontal disease may create an environment that harbours the gram-negative pathogen.²⁵ While Limeback noted the lack of documented evidence, he suspected the existence of the link and recommended that more research would improve the understanding of this relationship.

The relationship between opportunistic infections and oral infections in immuno-compromised patients has been studied among organ transplant patients.^{26, 27} Untreated oral disease in immuno-compromised patients have been associated with severe complications. These include pneumonia, urinary tract infections, fever, septicemia, intracranial extension of periapical abscesses, Ludwig's angina, facial osteomyelitis and sinusitis.²⁶

Viral oral infections may also be associated with systemic conditions. For example, primary herpetic gingivostomatitis may induce pain, malaise, elevated temperature and cervical lymphadenopathy²⁸.

The Challenge

Too often the relationships between oral health and general health are not recognized. The public, health policy makers, and other health care professionals may undervalue oral health for several reasons. Isman³ proposed that the lack of oral health knowledge among other groups may be due to the history of professional isolation within the oral health professions, both physically and politically. As a result of this, other health care professionals tend to be uneducated about oral health and do not know when to refer patients to a dental professional. Because dental professionals have relatively little interaction with other groups of health care providers, external regulatory authorities, and community agencies, they have a limited involvement in major health policy issues. Finally, Isman suggests that the prevalence of caries and periodontal diseases in the general population promotes the belief that oral health problems are an inevitable part of life.

Recommendations

In 1991 the Canadian Government Steering Committee on Oral Health Promotion²⁹ developed the following goals for oral health in Canada:

1. Promote oral health as an integral component of general health.
2. Place greater emphasis on oral health promotion and the prevention of oral disorders.
3. Minimize inequities in oral health by improving the oral health status of disadvantaged groups and communities across Canada.
4. Meet the oral health needs of the aging adult population with a comprehensive oral health program for all ages.

Using these goals for oral health in Canada, dental hygienists, whose primary responsibility is oral health promotion and the prevention of oral diseases, can help others to appreciate the important relationship between oral health and general health. Some suggestions to accomplish this include:

1. Develop public relations campaigns targeted at other health professionals, policy makers, and the public that convey the importance of oral health for both individuals and the community.
2. Accept responsibility for taking every opportunity to communicate with other health professionals, members of health policy decision-makers and members of the public.
3. Advance education, skills development and practice opportunities for oral health care professionals to participate in multidisciplinary health care teams.

The promotion of oral health should be an integral component of the promotion of overall good health. While this may seem obvious, our current health care system does not operate this way. Despite the success of preventive measures and early intervention, oral diseases remain among the most prevalent of all chronic health conditions. As reported earlier, 70 percent of Canadians did not know whether better oral health would improve their overall health status. These findings indicate that there is still a large population of Canadians to reach through oral health promotion initiatives. Dental hygienists in every practice setting can play a very important advocacy role as we strive to reconnect the mouth to the rest of the body.

References

1. Locker, D., Slade, G.: Oral Health and the Quality of Life Among Older Adults: The Oral Health Impact Profile. *Journal of the Canadian Dental Association*, 1993, 59:830-838.
2. Health and Welfare Canada. Canada's Health Promotion Survey 1990 Technical Report. Reprinted in *Probe* 1993, 27:215-221.
3. Isman, R.: Integrating Primary Oral Health Care into Primary Care. *Journal of Dental Education* 1993, 59:846-852.
4. National Institute of Dental Research. Oral Health of United States Children. *The National Survey of Dental Caries in U.S. school children: 1986-1987*. NIH, Publication No. 89-2247, 1989.
5. National Institute of Dental Research. *Oral Health of United States Adults. The national survey of oral health in U.S. employed adults and seniors 1985-1986*. NIH, Publication No. 87-2868, 1987.
6. Bhat, M.: Periodontal health of 14-17 year old U.S. school children. *Journal of Public Health Dentistry* 1991, 51:5-11.
7. Bloom, B., Gift, H. C., Jack, S. S.: Dental Services and Oral Health: United States. 1989. National Center for Health Statistics. *Vital Health Statistics* 1992:183.
8. Leake, J. L.: A review of regional studies on the dental health of older Canadians. *Gerontology* 1988, 7:11-19.
9. Statistics Canada. *Canadian Cancer Statistics 1992*. Health and Welfare Canada, Ottawa, 1992:14.
10. American Cancer Society. *Cancer facts and figures 1992*. Atlanta. American Cancer Society, 1992.
11. Ripa, L. W.: A half-century of community water fluoridation in the United States: Review and commentary. *Journal of Public Health Dentistry* 1993, 52:17-44.
12. Giunta, J. L.: *Oral Pathology*. Third Edition. Philadelphia: B.C. Decker Inc. 1989, p.42 and p.161.
13. Barone, R., Ficcaro, G., Gaglioti et al.: Prevalence of oral lesions among HIV-infected intravenous drug abusers and other risk groups. *Oral Surgery* 1990, 69:169-73.
14. World Health Organization. The economics of health and disease. *WHO Chronicle* 1971, 25:20-24.
15. Gift, H. C., Reisine, S. T., Larache D. C.: The social impact of dental problems and visits. *American Journal of Public Health* 1992, 82:163-168.
16. Locker, D., Grushka, M.: Prevalence of oral pain and discomfort: Preliminary results of a mail survey. *Community Dentistry and Oral Epidemiology* 1987, 15:169-172.
17. Locker, D.: The burden of oral disorders in an older adult population. *Community Dental Health* 1992, 9:109-124.
18. Karuzu, J., Miller, W. A., Lieberman, D. et al.: Oral status and resident well-being in skilled nursing facility population. *Gerontology* 1992, 32:104-111.

("Reconnecting the Mouth to the Body" continued on page 26)

The Independent Practice of Dental Hygiene: Political Economy, Professionalism and Policy

16

Introduction

The concept of independent practice of dental hygiene simply means that hygienists do not have to work "under the supervision of a dentist" as is still the case in most jurisdictions in Canada and the United States. The independent practice of dental hygiene is a radical idea in as much as it will alter not only how dental hygienists will function in such a regime, but how most dental services are organized, priced, and delivered in Canada. It is a highly desirable policy reform because it would meet several very important interests of the general public and do so without any negative consequences or significant risks to patients.

The independent practice of dental hygiene is, of course, strongly opposed by dentists and also by some dental hygienists themselves. Dentists' arguments against the idea are largely, if not wholly, without merit. Their opposition is motivated by their wish to preserve economic and professional power. By contrast, gaining independent practice is important to the continued professionalization of dental hygiene. There are economic advantages to hygienists who choose independent practice, and contrary to the fears expressed by some dental hygienists, it will also benefit those who choose to continue working under the supervision of dentists.

A policy permitting the independent practice of dental hygiene is long overdue. It was recommended at least 20 years ago (Ontario Economic Council, 1976; Evans and Williamson, 1978) if not earlier. The fact that the independent practice of dental hygiene has yet to be implemented throughout Canada is a testament to the political power of dentists and failure of the provincial bureaucracies and governments to put the public interest ahead of dentists' interests. However, the social, economic and political environments have changed significantly over the past two decades, and now may well be the best time yet for dental hygienists to press provincial governments to finally undertake the desired policy reform. At the very least, a concerted and persistent struggle for this is certainly warranted.

Health Care reform

A policy allowing the independent practice of dental hygiene is commendable because it is extraordinarily consistent with each of the major objectives of health care reform in Canada.

It would improve efficiency, that is, reduce the cost of the services dental hygienists are competent and qualified to provide. It would

also most assuredly meet the objective of allocative efficiency, by which economists mean that the quantity and mix of dental services would be more consistent with the dental needs of the population. Dental hygiene services fit in nicely with the "population health" philosophy that emphasizes disease prevention, health promotion and protection, and health education. Finally, and perhaps most importantly, the independent practice of dental hygiene would bring about a more equitable distribution of dental services. It could do so by improving the accessibility to such services to the working poor, the elderly, the immigrants, visible minorities, rural populations, native populations, and a sizable proportion of even reasonably well-off people who currently underutilize services provided by dental hygienists.

It is rare for one fairly straightforward policy reform to score positively on all three health reform objectives. Equally importantly, it is difficult to think of any other health care reform that would cost governments any less than this policy change.

Is the idea of an independent practice of dental hygiene feasible? The answer is surely yes, if it was mainly a matter of the education, training and experience of dental hygienists, and its acceptance by the public. But it also requires acceptance by the provincial bureaucratic and political authorities and the courage to enact the desired policy change, specifically the legislative repeal of the requirement that dental hygienists be supervised by dentists.

Arguments Against Independent Practice

Dentists, in both Canada and the United States, argue that the quality of dental care can only be assured by dentists. Complaints of the quality of services rendered by dental hygienists is rare but presumably dentists must believe that this is due to their supervision. They presume that were dental hygienists to do work independently of dentists the quality of care would suffer, or at least cannot be assured. The counterarguments to the dentists' claims and presumptions are direct and persuasive (Brown, 1995). Direct and personal supervision of hygienists work is rather uncommon even in dentists' practices. Hygienists who work in public health settings render their services with no supervision at all by dentists. The evidence from the United States is that independent dental hygienists' work is of equal, or more typically, much better quality than the quality of the same services provided by dentists (Liang and Ogur, 1987; Freed and Perry, 1992). Dentists themselves are

weak on quality assurance and clinical guidelines as compared to the medical and other health care professions. Finally, dentists have used such arguments against dental nurses in Saskatchewan but in a double blind clinical trial comparing dentists' and dental nurses, the latter were found to perform clearly superior work in every area of services assessed by the outside clinical evaluators (Saskatchewan Dental Plan, 1976).

Dentists are also wont to argue that dental hygienists are not capable of handling dental or medical emergencies that may arise in the course of treatment. However, such emergencies are very rare, and life-threatening occasions are even rarer. Even in emergencies, quick referrals and getting patients the needed emergency care is certainly not impossible, and, in most Canadian cities, is not even difficult. Comprehensive diagnosis is not necessary for virtually all the services patients would want from independent dental hygienists. In any case, hygienists are not likely to take chances with their patients health because there simply is no need to, and because they would fear the adverse consequences to them (individually and as a group) for negligent or incompetent care. Finally, patients should have the right to choose from whom they wish to receive care, on the basis of any objective data on risks and safety that is available, as well as factors such as price, convenience and accessibility of the care givers. Dentists insistence that patients must see dentists for all dental care is not only paternalistic but serves the purpose of protecting the monopolistic power they currently enjoy.

Dentists also complain that independent practice would fragment and break-up the "team" delivery of care. But many dentists do not employ dental hygienists and dental colleges have not yet mandated that each dentist must do so. Dental care is fragmented already. Furthermore, even with a policy permitting independent practice, many if not most dental hygienists would still prefer and wish to continue working in dentists' offices. The "team" concept certainly has merit, even more so when dental care is integrated with medical and other health services. However, dentists do not appear to have this wider view of "team" care, as evidenced by their reluctance to join teams of health care givers in public health and community-based delivery organizations. Indeed, such organizations (e.g. community health centers) are more likely to employ and integrate hygienists if independent practice of dental hygiene is allowed in the future.

Dentists sometimes allege that the independent practice of dental hygiene will not necessarily lead to lower prices for the services offered by dental hygienists. Dentists suggest that they use prophylaxis provided by hygienists as a "loss leader". Manga and Campbell (1992) have shown this to be false and counterfactual. On the contrary, dentists make substantial profits from the work of dental hygienists.

Finally, both dentists and some dental hygienists believe that the independent practice of dental hygiene will have an adverse economic impact on dental hygienists themselves. Just why they expect this outcome is hardly ever substantiated or closely argued. It appears to rest on the following two presumptions. First, there will be a shift in demand (patient visits) from "integrated" practices to independent dental hygiene practices. Secondly, dentists will be compelled to react to this shift by paying the dental hygienists lower wages and salaries and even laying them off. This happens to be a terribly mistaken economic analysis of the likely impact of independent practice on dental hygienists, as will be shown later in the paper. Nevertheless, it is an argument that has instilled fear among

dental hygienists though what proportion of the profession truly fear these alleged negative consequences of independent practice is not known.

The Economics of Independent Practice

What are the most salient economic trends relevant to the independent practice of dental hygiene, and what implications do they have for dental hygienists? Perhaps the most important trend is that the demand for services offered by dental hygienists has risen over the past two to three decades and will continue to do so in the foreseeable future. Consequently, the need for dental hygienists is assured with corresponding opportunity of employment and good levels of income, where "good" is defined relative to the responsibilities and investment in education across a broad spectrum of occupations and professions. The demand for fillings, extractions, and other services typically offered by dentists is either leveling off or even decreasing. Whether we already have a "surplus" of dentists is arguable (Manga and Campbell, 1994) but at the current level of dental fees it is hard to sustain the view that there is a shortage of dentists. The population to dentists ratio has fallen continuously for well over two decades, and changes in technology, the growth in related dental care professions, and changes in the need for dental care has meant that past "shortages" have disappeared, and there is considerable speculation about a potential surplus of dentists.

There is also a very significant level of unmet need for dental care services provided by dentists and dental hygienists. The principal reasons for this unmet need are the high fees for services and the high costs of insurance. Since prophylactic care can be postponed or consumed less frequently, and there seems to be inadequate understanding of the value of such care on the part of various socio-economic and cultural groups, it would be fair to assume that there is a very significant level of underconsumption and unmet need for services offered by hygienists.

The services provided by dental hygienists are neither complex nor do they typically involve high or serious health risks to patients. This is not to deny or denigrate the varied knowledge and skills hygienists acquire in their training and employ in their practice, but to point out that patients need not be concerned about risks to their oral health in accessing the needed care directly from hygienists. Third party liability insurance coverage should also be relatively easy and inexpensive assuming a competitive insurance market.

Just how independent dental hygienist practices are organized would make a significant difference to the cost of services and hence how hygienists' services are priced. The unit costs of solo practice would be significantly higher than group practices of three, four or more hygienists. Group practice also confers many other advantages such as extended hours, accommodating leaves of absences and vacations, a wider product or service offering, part-time employment and so on. There are many other issues pertinent to the organizational aspects of independent dental hygiene practices that cannot be properly and fully discussed here, but mention needs to be made of issues such as walk-in centres; outreach and mobile programs; location of practice; hygienists or other professional management of the practice; advertising and marketing; method of paying hygienists i.e. fee for service, salary, capitation, profit-sharing; contracting with public health, community health and social services centres, nursing homes, large corporations and unions; and so on. Dental

hygienists should strive for legislation that permits a wide range of options in organizing, delivering and marketing the services they offer. Such legislation would be better both for the hygienists and the general public.

The demand for dental care generally is price sensitive. Demands for the care provided by hygienists would be even more likely to be price sensitive than acute dental care provided by dentists (Brown, 1995). That is to say, a reduction in the price of hygienist-provided care would lead to a proportionately greater increase in demand for such care. This results in both more work and higher incomes (revenues) for hygienists. Would independent practices charge a lower price for their care? It would be unwise if they did not. Their practice costs are lower and they would need to charge a lower price because they offer a limited range of services compared to the "integrated" dental practice staffed by dentists, hygienists and other auxiliaries. From an analysis done by Brown (1995) one could infer that prices could be reduced by a very conservative 20 percent without hygienists suffering any loss of income. Indeed, for reasons suggested here, their incomes should rise. A lower price is the safest and surest competitive strategy for hygienists in the dental care market. An economic reality not to be overlooked is that hygienists' clients are "repeat" customers who would need similar services at more or less regular intervals. A competitive price to build up a client base would be essential. Finally, without lower fees, the economic and public interest case favouring independent practice is virtually impossible.

Hygienists will also have an important role in improving the quality of dental care generally. Independent practice itself will encourage hygienists to provide high quality care for reasons of competition with the traditional dental practices. Hygienists will also influence the quality of care through their referral role. They are more informed about the quality of work of dentists and can steer (refer) patients to those they consider better. While hygienists are not "gatekeepers" they do acquire an important role as sources of referrals to dentists.

Greater accessibility means earlier diagnosis and treatment of problems. There is no question that the demand for hygienists services will increase significantly if independent practice is allowed. Whether it will also lead to greater demand for other care, that is those offered by dentists is, however, difficult to tell. Because there is a huge unmet need it is not obvious that the demand for services offered by dentists' will be reduced, though dentists no doubt fear this outcome. The net effect, however, is an increase in the aggregate demand for dental care services.

The independent practice of dental hygiene is one approach to meeting the objective of greater equity in access to dental care services. Currently, there is clear and documented unmet need on the part of the poor, visible minorities, the institutionalized population groups, the elderly, a sizable segment of the lower middle class (especially those without insurance coverage), the aboriginal population and immigrants.

The independent practice of dental hygiene is consistent with, and indeed is required by, the current political tendencies to emphasize the role of markets, competition and managed care, or conversely to reduce and, if possible, eliminate monopoly power. This market ideology is, strangely enough, also favoured by dentists but not for the dental care market itself. In this political environment it is those

opponents of competition, lower prices and greater access to dental care, who have to prove that the economic welfare of the public is not well served or even harmed by allowing the independent practice of dental hygiene. From the foregoing it is clear that this would be very difficult for them if it is to be done in an open public manner which allows interested parties to debate and refute their assertions and arguments.

Dental Hygienists Opposition to Independent Practice

As was mentioned earlier, an unknown number of dental hygienists either oppose or simply fear a policy reform allowing the independent practice of dental hygiene. At its most basic, the fear rests on the belief that independent dental hygiene practices would result in loss of employment and income (salaries) for hygienists wishing to work in dentists' practices. For this to happen, independent dental hygiene must be successful in siphoning off a very significant number of patients away from traditional dental practices. This is a false and very partial analysis of the matter.

The argument overlooks the important trends mentioned above. We can reasonably expect an overall increase in the demand for care. It is certainly not a fixed quantum to be carved up between independent dental hygiene practice and traditional dentists' practices. As well, the demand for dental hygiene services has and will continue to increase. A reduction in the fees for oral prophylaxis, topical application of fluoride, and other services will increase the demand for hygienists' services. A higher demand for hygienists service should assure ample opportunity for employment and good incomes.

Secondly, dentists will not want to get rid of hygienists and thereby provide such services themselves. The opportunity cost for them is too high. However, they must offer a full range of services, otherwise they risk significant loss of clients and revenue. They would also want to avoid a situation in which they were overly dependent on independent hygienists for referrals. A "team" approach makes good economic sense for dentists and more so if and when the independent practice of dental hygiene is allowed.

Thirdly, hygienists who fear independent practice also overlook the impact it will have on the supply-side of the dental hygienist (labour) market. Independent practice means a tighter (reduced) supply of hygienists faced by dentists. Alternative venues of jobs means that the supply of hygienists will be segmented between different potential employers and employment. This should lead to higher aggregate opportunities for hygienists and higher wages, salaries and income. Hygienists will also have greater choice of location, practice styles, service mix, clientele, etc. the greater is the number of practices that need their services.

The three reasons cited above point to the opposite of what some hygienists fear. Independent practice of dental hygiene is good for all hygienists including those who wish to remain employees of dentists. This group will in any case remain many times larger than the hygienists who seek out independent practices. In a situation in which dentists face a higher supply of hygienists and where the demand for hygienists services are increasing, it is difficult to see why dentists will disemploy hygienists or pay them less. Indeed,

("The Independent Practice..." continued on page 20)

Mediation in the Workplace

Regrettably, conflict in the workplace is very much alive and well! We are all living in stressful, turbulent times and conflict is a natural result of competing demands, interests and priorities. Yet far too many people think there is very little that can be done to resolve conflict in the workplace. People fear they may lose their jobs if they speak up, or think that long drawn-out and expensive legal processes are the only way to resolve conflict at work. Not so. Workplace conflict (even between employer and employee) can be effectively resolved, and working relationships restored, through a process known as mediation.

What is Mediation?

Mediation is a problem-solving process. It provides a way for two or more people to solve problems by talking to one another in a safe and controlled environment. Disputants discuss their viewpoints, including how they have been harmed or offended, and then negotiate an agreement for solving the problem or conflict. A neutral third person, known as the mediator, facilitates the discussion and negotiations by helping *both* parties communicate what is important to them. Mediators are neutral to the conflict: they do not take sides nor do they determine how problems should be solved.

What Happens in a Mediation?

The mediator guides disputants through a process of communicating and listening to each others' needs and interests. They facilitate the search for ways to solve the problem based on a thorough understanding of each of the disputants' stated needs and interests. The mediator encourages a give-and-take movement between the disputants, with a win-win outcome as the ultimate goal.

What Are the Benefits of Mediation?

- the people *experiencing* the problem are the people solving the problem
- early intervention often halts the damaging effects of escalating conflict
- it requires less time and money than other forms of dispute resolution (e.g. arbitration or litigation)
- if the attempt at mediation fails to resolve the conflict, nothing said in the mediation can be used in the event of future proceedings or arbitrations (mediation is a *without prejudice* process)
- it produces solutions which meet individual specific needs
- it produces solutions which are private and confidential
- it can build or restore working relationships
- it teaches a process for resolving future conflicts
- it promotes understanding between people and (re)builds trust

What Are the Risks and Costs of Mediation?

- it requires disclosure of information, interests and needs
- it requires a genuine desire to solve the problem

- it requires voluntary participation
- it requires *in good faith* participation
- professional fees for the mediator vary but are normally lower than legal costs (*Note: When appropriate, fees are shared equally between the two disputants.*)

What Are the Roles and Responsibilities of the Mediator?

- to be skilled and experienced as a mediator (see "How Does One Choose a Mediator?")
- to be neutral toward and respectful of all the disputants
- to address fears and power differences between disputants
- to help disputants find solutions to their problems (not to impose or determine solutions)
- not to be a judge, advocate, legal advisor or psychological counsellor

What Are the Roles and Responsibilities of the Disputants?

- to listen to each other
- to be prepared to move toward a solution (give and take)
- to consider alternative solutions
- to commit to agreements
- to participate honestly and *in good faith*

How Does One Choose a Mediator?

Mediation is an evolving profession growing in popularity and acceptance around the world. Practitioners can belong to any of a number of professions such as psychological counselling, social work, law, education and the clergy. Some practitioners may have completed university degree programs in dispute resolution.

While mediation is at present an unlicensed, unregulated activity, most reputable mediators have advanced degrees in the social sciences (i.e. professions stated above) *and* belong to reputable organizations with interests in maintaining quality assurance standards for the practise of dispute resolution. One such organization is SPIDR, the *Society of Professionals in Dispute Resolution* located in Washington, D.C.

Questions to Ask When Choosing a Mediator:

- How did you become a mediator?
- What academic or other training have you had?
- How long have you been practising as a mediator?
- Do you specialize in any particular kind of mediation?
(*Note: Some mediators practise in specific areas such as family mediation, environmental mediation, workplace mediation etc., while others practise as generalist mediators.*)
- Who may I call for a reference concerning your mediation skills?
- What is your mediation process?

Then make a determination considering the following:

- Do I trust this mediator's skill and experience?
- Do I feel comfortable with this mediator?
- Do I think this mediator is neutral to our conflict or will they take one side or the other?
- Will this mediator *tell me* how to resolve my problem or *help us* find the best solution for our problem?
- How does mediation compare with other forms of dispute resolution?

What Does it Take to Complete a Successful Mediation?

Put bluntly, it takes skill and courage. With the help of a skilled mediator and the courage to discuss the problem, it is possible to resolve conflict at work in a timely and effective way. Skilled mediators provide a controlled and protected process so that disputants

can be free to "take risks", confront their fears, and speak up for themselves. With even a little bit of courage and a skilled mediator, a lot can be done to resolve conflict in the workplace.

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Dispute Resolution. Paula served as the Ombudsman at The University of Manitoba, and, since starting her company in 1993, she has specialized in providing mediation, training and consultation services in resolving workplace conflict. She has a Master of Educational Psychology degree in adult learning and counselling, and has provided counselling services to dental hygiene students.

MEDIATION COMPARED TO OTHER FORMS OF DISPUTE RESOLUTION

Private Forms of Resolution	Judicial Forms of Resolution
Direct negotiation between yourself and another person(s)	Arbitration (resolution imposed by a judicially appointed authority)
Facilitation (advice provided by an impartial third party about how to resolve a problem or dispute)	Litigation (resolution imposed by a judge/jury)
Mediation (an impartial third party brings disputants together to help them resolve their problem)	
Increasing costs of time and money Decreasing control over the process and outcome	

THE INDEPENDENT PRACTICE... (continued from page 18)

they have good reason to avoid increasing numbers of hygienists for independent practice.

While dentists will have to compete with independent practices for both hygienists and clients, it does not follow that dentists must match the fee of independent hygienists. In fact, their fees will be higher since clients are likely to be willing to pay more for a full-line service and for a "lower health risks" (if they happen to believe this, as no doubt many would).

Summing Up

The evidence provided supports the argument that very significant benefits would accrue to the general public should provincial governments revoke the requirement that dental hygienists be supervised by dentists. These benefits include lower prices, an increase in accessibility, higher rates of utilization, a better quality of care, a greater choice of professional care and greater emphasis on the prevention of disease. All of these taken together should result in much improved oral health of the population.

For hygienists there will necessarily be greater choice of practice and employment, higher professional status, and more security of

employment and income. Dentists will suffer a reduction in their monopoly power but whether their incomes will be adversely affected is uncertain. One can reasonably expect some to gain, or lose, or stay even from this policy change.

Interestingly, provincial governments rarely explain why they do not renounce the requirement that dental hygienists must be supervised by dentists. Dental hygiene associations throughout Canada must engage the provincial authorities in a thorough and frank discussion on this matter and, if necessary, pressure the government to at least explain the basis for its reluctance or hesitancy in making the policy change. Discovering their objections and difficulties will at least permit the dental hygiene associations to focus their activities to overcoming or responding to these difficulties.

Finally, if dental hygienists truly believe in the virtues of independent practice they will have to organize and work hard to bring about the desired policy change. Rational arguments and a convincing case do not bring about policy reform automatically. The dental field is replete with inaction on the part of governments and even perverse reforms such as the gutting of the school-based dental care program in Saskatchewan (Manga and Campbell, 1994).

(*"The Independent Practice..." continued on page 21*)



Happy New Year, one and all. I hope you had a wonder filled Christmas, and that the times of giving and sharing with family and friends will be treasured forever. This time of year often provides the boost we need to get us through our Canadian winters.

I'm sure that, once again, computers, modems and various programs were under many trees. If you have just come online this year, you will need to bookmark this address:

<http://jeffline.tju.edu/DHNet/index.html>

I'm not sure how many of you are taking advantage of the DHNet online from Thomas Jefferson University, but I thought I'd walk you through a few steps which will give you miles of exploration for the future. From your DHNet homepage, click on "Research Collaboratory", then click on "Search the Knowledgebase". Scroll down slightly and click on "Browse the Knowledgebase". Here you will be able to pull down menus of your choice. There are three lists: author, topic, and type of material. Pull down any that you think you would be interested in "browsing", but I suggest this sequence for starters:

Author: Deborah L. Hardy

Topic: Professional Education and Development

Type: Journal Article

Click on "Browse Topic" and you should come up with an abstract titled "Self-Report of Oral Health Services Provided by Nurses' Aides in Nursing Homes". This abstract is quite interesting, but,

better still, you can now "browse", entering various authors, topics, and material types into this sequence. Have fun!

Here's another address: <http://www.cda.org/public/pubhsrv.html/>

This site is Public Health Service Report on Fluoride Benefits and Risks (1991). It addresses the health benefits (reduction of caries) and risks (cancer, effects on bone, dental fluorosis) of fluoride. It also gives policy recommendations that support optimal fluoridation of drinking water (0.7–1.2ppm) for the reduction of dental caries. This report gives practical suggestions on how to limit overexposure to fluoride, as well as ways to make the FDA and manufacturers responsible for more accurate labeling systems (i.e.: labeling of toothpastes).

If you are like me, you sometimes get your continuing education information too late to schedule into your plans. Well, Internet surfers now have no excuse (oh rats!). A group from New Brunswick now has a website, Sybertooth Dental Continuing Education Directory:

<http://www.sybertooth.com>

This site lists the country (worldwide) first, then the province or state, the courses available, and, lastly, their dates. You are given the option to click on particular courses to find out dates, speakers, locations, costs, and credit hours. You may also e-mail a contact person directly. This site is a must to bookmark and check in on every two or three months.

These addresses should keep you busy for a few months. Until next time, keep probing for information to expand your personal database. Feel free to e-mail me at:

rwolf@atcon.com

Karen (Malloy) Wolf graduated from Dalhousie University's School of Dental Hygiene in 1984. She has practiced in general private practice for the past 12 years and continues to do so four days a week. She taught Radiology at the Nova Scotia Institute of Technology on a part-time basis for two years. She has delivered oral health presentations to local daycare centres, schools and Brownie groups. She is married with three children.



THE INDEPENDENT PRACTICE... (continued from page 20)

A relentless and concerted action will be necessary to compel governments to change the existing policies. Actions will, of course, entail pressuring bureaucrats and politicians to examine the issue again through publicity in the media, hygienists involvement in electoral politics, and eliciting consumer support for the desired reform. Forming alliances with other health care professions and delivery organization is also possible. Finally, a higher level of solidarity within the dental hygienist profession would also be desirable, if not necessary, for the achievement of the goal of independent practice.

References

- Brown, M. C.: "Dental Hygienist Professional Autonomy: Efficiency Promotion in Dental Care Markets". Report for the Alberta Dental Hygienists' Association, 1995.
- Evans, R. G. and Williams, M. E.: *Extending Canadian Health Insurance: Options for Pharmacare and Denticare*. University of Toronto Press, Toronto, 1978.
- Liang, J. N. and Ogur, J. D.: *Restrictions on Dental Auxiliaries: An Economic Policy Analysis*. Federal Trade Commission, Washington, D.C., 1987.
- Manga, P. and Campbell, T.: *Health Human Resources Substitution: A Major Area of Reform Towards A More Cost-Effective Health Care System*. Queens. University of Ottawa. Economic Projects, Monograph 94-01, 1994.
- Ontario Economic Council: *Health: Issues and Alternatives*. OEC. Toronto, 1976.
- Reed, J. and Perry, D.: *Final Report: Access, Utilization and Quality of Independent Dental Hygiene Practices—An Evaluation of Dental Hygiene Practice Prototype*, Health Manpower Pilot Project Program #139 of California Office of Statewide Health Planning and Development, California, 1992.

1996 National Dental Hygiene Campaign Report

University of Manitoba School of Dental Hygiene

—Submitted by Prof. Mickey Wener, Faculty Member

In celebration of the 1996 National Dental Hygiene Campaign, second-year students at the University of Manitoba School of Dental Hygiene designed displays and pamphlets that were presented at the Garden City Shopping Centre, Winnipeg, on Saturday, October 26th. As CDHA's target audience for this year's campaign was adults, students had a broad range of topics from which they could apply both their knowledge and creative skills.

The morning displays included:

- *Straight Talk...* orthodontics
- *Is the Hollywood Smile for You?*... tooth bleaching
- *The Power of Prevention...* plaque control
- *Baby Bottle Blues...* baby bottle tooth decay
- *A Healthy Smile is Ageless...* xerostomia
- *OUCH...* tooth sensitivity
- *Hey Sports Fans...* mouthguards

Mall shoppers stopped in the afternoon to see the following displays:

- *Sugar... It's not as Sweet as You Think!*... tooth decay
- *Eating Disorders...* oral effects of anorexia and bulimia
- *Tips for Teething...* care for infant's and toddler's teeth
- *They're Just Baby Teeth—Or are They?*... baby bottle tooth decay
- *Are You New to Winnipeg?*... access information for newcomers
- *Fight the Fear with Facts...* oral health information on AIDS

Shoppers were offered Trident gum, compliments of Trident, and an opportunity to win a gift basket containing oral health supplies (compliments of Shoppers Drug Mart). Many interested people stopped to ask questions, giving the students an opportunity to share their knowledge with the public.

These displays were also exhibited in the University of Manitoba's Faculty of Dentistry Clinic Reception area. As well, students share them for use for other oral health programs that they develop and deliver in the community throughout the year. This experience provided a great opportunity for students to interact one-on-one with people of all ages. Participation was excellent, leaving the students with the feeling of having reached their goal of providing this target group with important oral health information.

Students who participated in this project were Marie Jaworski, Mary Ann Klippenstein, Sara Stiefelmeyer, Tanya Dreher and Jennifer Kostiuik.

Vancouver Community College Dental Hygiene Department

—Submitted by Ginny Cathcart, Instructor

Dental hygiene students at Vancouver Community College contributed to the National Dental Hygiene Campaign by presenting table clinics at the Vancouver District Dental Communities' Annual Conference on November 22nd. The table clinics were viewed by about 100 dental professionals at the Pan Pacific Conference Centre. The displays focused on various aspects of the scope of dental hygiene practice.

In addition to student table clinics, four oral presentations were made by dental hygienists:

1. *Healthy Teeth—Happy Children—A Culturally Sensitive Approach to Preventing Early Caries in Children*, Presenters: Beverley Contreras, Dip.D.H. and Yvonne Phung, Community Dental Health Worker.
2. *Oral Hygiene Considerations and Treatment Planning for Medically Compromised Patients*, Presenter: Allison Ransier, B.Sc., Dip.D.H.
3. *Wellness—A Matter of Aliveness*, Presenter: Toni Pieroni, Dip.D.H., M.A., RCC.
4. *Career Alternatives: The Role of Research Coordinator*, Presenter: Mary Banford, B.A., Dip.D.H.



1. Students from the Vancouver Community College's Dental Hygiene Department presented a variety of topics as table clinics during the 1996 National Dental Hygiene Campaign.



2. *OUCH* table clinic by Mary Ann Klippenstein, Marie Jaworski, and Sara Stiefelmeyer (University of Manitoba School of Dental Hygiene).
3. *A Healthy Smile is Ageless—Older Adults are at Risk for Dry Mouth* table clinic by Tanya Dreher and Jennifer Kostiuik (University of Manitoba School of Dental Hygiene).

1996 NDHC Report (continued)

Dental Hygienist—Nova Scotia

To celebrate the National Dental Hygiene Campaign Shelley Williams, Dip.D.H., of Middleton, Nova Scotia presented a hands-on *Oral Hygiene Awareness Day* at her children's schools. Her audience included 30 preschoolers and 100 grade one students. After Shelley's presentation, the students chewed disclosing tablets, checked each others plaque level, and practised their brushing technique.

Special thanks to Nathalie Marion of Oral B for donating 100 brushes, thanks to N.S.D.H.A. for their contribution of 30 brushes, and to Sheila Levy, Public Health Office for donating pictures, stickers, and visual aids.

The CDHA congratulates all those who participated in the National Dental Hygiene Campaign for their efforts at becoming involved in their communities!!

International Federation of Dental Hygienists

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IFDH is a federation that links dental hygienists worldwide.

Objectives

- To promote access to high-quality preventive oral health services to all people.
- To represent and advance the profession of dental hygiene on a non-governmental worldwide basis.
- To promote and co-ordinate exchange of knowledge and information about the profession, its education and practice.
- To raise the level of awareness of the public that oral disease can be prevented through proven regimes.

Membership includes quarterly issues of the IFDH newsletter, *Contact International*, and advance information on International Symposia on Dental Hygiene and other meetings of international interest.

To apply for membership, complete the form below and send with annual subscription fee of \$50, or \$150 (U.S.) for a three-year subscription to:

Sue Llyod, IFDH Secretary
55 Kemble Road
Forest Hill, London,
SE23 2DH
UNITED KINGDOM

The 14th International Symposium on Dental Hygiene will be held in 1998 in ITALY.

Application for Individual Membership

Dental hygienists who are members of national dental hygienists' associations that are IFDH Organization Members are invited to participate in the International Federation of Dental Hygienists as individual members.

Member Countries

- | | | |
|-------------|-------------------|------------------|
| • Australia | • Italy | • South Africa |
| • Canada | • Japan | • Spain |
| • Columbia | • Korea | • Sweden |
| • Denmark | • The Netherlands | • Switzerland |
| • Finland | • New Zealand | • United Kingdom |
| • Germany | • Nigeria | • USA |
| • Israel | • Norway | |

Please use uppercase letters or type

NAME:

FULL ADDRESS:

COUNTRY: POSTAL/ZIP CODE:

TELEPHONE: (Home) (Office)

FAX: (If available) DATE:

Please enclose:

1. Subscription fee of \$50 or \$150.* All bank drafts, checks, or money orders payable to the International Federation of Dental Hygienists.

2. Proof of current membership in a national dental hygienists' association that is an IFDH Organization Member.

* subscription fees in U.S. dollars ONLY.

Letter to the Editor

November 15, 1996

Dear Editor:

The American Dental Hygienists' Association's Position Paper on Managed Care (*Probe*, September/October 1996) raises a number of issues that need to be addressed.

While I am sure no one is opposed to controlling costs, organized dentistry has a real problem with certain so-called "managed care" programs that take an unwarranted role in controlling patient care. Statements from the ADHA position paper like, "(managed care organizations) oversee and control the care received", and "most MCOs designate a group of providers with whom plan members must consult or are encouraged to consult", raise a red flag for dentistry. Should care not be overseen and controlled by the care provider and the patient?

The Canadian Dental Association has drafted principles, two of which follow, to explain its position on "managed care".

Dentistry must avoid blanket condemnation of so-called "managed care". The term is sometimes loosely used to describe acceptable managed-cost programs. For many years the profession has accepted traditional employer-sponsored dental coverage which entailed, as a matter of course, such cost-limiting provisions as annual maximum amounts for certain treatment, co-payment, and/or deductibles.

There are two "managed care" plan types against which dentistry must draw lines and take stands in defence of patient oral health care needs, as well as in defence of professional integrity and credibility. The first is contracted service plans, wherein cost-control crosses the traditional plan line and goes to an extreme which risks jeopardizing the delivery of high quality care. Capitation arrangements are a prime example. Certain Preferred Provider Organizations (PPO) plans and Dental Health Maintenance Organization (DHMO) plans are also

in this category. They promote discount dentistry and remove from patient participants the freedom to use any dentist of choice and be covered. The second is the type of plan which crosses the line from cost control into attempted treatment control and intrusion into the patient-dentist relationship. The Oralife Group offers the most blatant current example with a letterhead which proclaims "Care Management".

Your readers are health care providers who, I am sure, value the relationships they have with their patients. How, then, will they feel when patients, who they have come to know, are referred to another dental office by their MCO? How would any of us feel if we were told to see a specific health care provider, one that we are not familiar with, and perhaps one with whom we are not entirely comfortable? Care is a personal thing, and patients value the relationship they have with their dental team. In a survey conducted by the Ontario Dental Association, for example, 87 percent of employees endorsed the concept of freedom of choice in selecting their own dentist, and two-thirds of respondents said that they would pay extra for this right.

As health care providers, our duty is patient care. I question whether certain "managed care" organizations share our commitment.

Sincerely yours,

Barry Dolman, D.M.D.,
President, Canadian Dental Association

Editor's Note

The American Dental Hygienists' Association's Position Statement on Managed Care, reprinted in the September–October 1996 issue of *Probe*, was printed without an intended preamble. The preamble informed readers that the position taken in the text was that of the American Dental Hygienists' Association alone and did not necessarily represent the views or position of the CDHA or its executive.

Letter to the President

November 12, 1996

Dear Ms. MacIntosh:

As one of a number of dental hygienists who are attempting to provide dental hygiene care outside the traditional dental office, I seek your assistance in addressing a problem that has come up a number of times: "What happens if a patient has dental insurance? How would this be handled?" Veterans' Affairs and Indian Affairs insurance coverage are two examples of this situation.

My question is: Is there a dental hygiene fee guide that might address this issue, what is it, how can I access it and how would I use it?

Please feel free to use my letter in *Probe* to determine the level of interest in this question.

Sincerely,

Pat Spencer, Dip.D.H., B.A.,
Mobile Oral Health Services,
Simcoe, Ontario

Editor's Note

Members wishing to comment on the question of a dental hygiene fee guide may do so by writing to *Probe*, Managing Editor, CDHA, 96 Centrepointhe Drive, Nepean, Ontario, K2G 6B1.

Grants/Scholarships/Awards: Call for Applicants

For further information and/or an application form for the CDHA Student Hygienist Scholarship Program, the CDHA Dental Hygiene Research Grant, or the CDHA Graduate Student Research Award, contact:

Canadian Dental Hygienists Association
CentrepoinTE Chambers, 96 CentrepoinTE Drive
Nepean (Ottawa), ON K2G 6B1

CDHA Student Hygienist Scholarship Program

What is the CDHA Student Hygienist Scholarship Program?

The CDHA Student Hygienist Scholarship is awarded to an undergraduate dental hygiene student for their contributions to the advancement of dental hygiene.

The program consists of:

- One \$1,000.00 scholarship to be used toward dental hygiene education expenses.
- Air travel expenses to and from the CDHA Annual Professional Conference and four nights accommodation at the conference hotel. (Conference registration will be paid by the CDHA.)

Who is Eligible?

- Undergraduate dental hygiene students.
- Applicants must be CDHA student members.

How to Apply

- Applicants must submit, in writing, a description of their involvement with the Canadian Dental Hygienists Association.
- Applications must be accompanied by the endorsement of two CDHA members.

Criteria for Judging

- Demonstrated involvement in the Canadian Dental Hygienists Association, e.g.
 - Submitted material for publication in the CDHA *Journal* and/or *Explorer*.
- Demonstrated keen interest in national dental hygiene issues.
- Demonstrated qualities of leadership.
- Participation in National Dental Hygiene Campaign.
- Participation in national/international conferences such as table clinic presentations, poster sessions, presentations, etc.
- Applicants must describe how they have promoted oral health and the profession of dental hygiene in the community.

Note: The successful candidate must agree to submit for publication an article outlining his/her accomplishments/involvement.

Application Deadline

Applications are to be submitted to CDHA's Central Office by **April 1, 1997.**

CDHA Dental Hygiene Research Grant

Objective: To support Canadian dental hygienists engaged in research that enhances the dental hygiene profession's ability to promote health and well-being.

General Description: A grant of \$5,000 will be awarded annually to a Canadian dental hygienist involved in qualitative or quantitative research as a principal investigator or co-investigator. Preference will be given to research projects relevant to the discipline of dental hygiene and the goals of the CDHA.

Eligibility: Applicants for this grant must be academically qualified Canadian dental hygienists who are active or life CDHA members in good standing. Evidence of academic credentials at the Masters and/or Ph.D. level is required.

Applications: The deadline is **March 31, 1997.** Applications must be submitted on forms available from CDHA's Central Office.

Condition of Award: On completion of the research project, recipients of this grant agree to provide a written report for the *Probe* or reprints of journal articles to CDHA's Central Office.

CDHA Graduate Student Research Award

Objective: To promote the research training of Canadian dental hygienists in research oriented Masters or Doctoral programs

General Description: An award of \$5,000 will be given annually to a highly qualified candidate enrolled as a graduate student in a Masters or Doctoral program.

Eligibility: Applicants for this award must be Canadian dental hygienists who are active, associate, student or life CDHA members, in good standing, who may be studying full or part time. Applicants must present evidence of having been accepted by a recognized academic institution.

Applications: The deadline is **April 1, 1997.** Applications must be submitted on forms available from CDHA's Central Office.

Duration: This award is made for one academic year for full-time students or the equivalent for part-time students. The award may be renewable for one additional academic year or its equivalent on receipt of a satisfactory progress report. The progress report must detail work to date and include any pre-prints or reprints arising from the work. Any request for renewal of this award should be accompanied by a letter from the research supervisor and one other referee.

Condition of Support: On completion of studies, recipients of this award agree to provide a bound copy of the thesis or project to CDHA's Central Office.

The National Dental Hygiene Certification Examination

Background

The written NDHCE is developed, administered, and scored by the National Dental Hygiene Certification Board.

To ensure that the examination was developed to achieve its stated purpose (i.e., to protect the public by ensuring that those who are certified possess sufficient knowledge and skills to perform important occupational activities safely and effectively), a rigorous test development process was implemented. This process met or exceeded all professional standards as specified by the guidelines for Educational and Psychological Testing (CPA, 1986). Dental hygiene professionals and academics from across Canada, representing all fields of practice and both official languages participated in the development of the NDHCE.

The content of the examination is based on dental hygiene competencies (e.g. knowledge, abilities, skills, attitudes, and judgements) outlined in the National Practice Standards document published in 1988 and revised in 1995. The examination requires the dental hygienist to apply their knowledge as an entry-level practitioner to solve oral health care problems and answer questions related to dental hygiene practice.

The examination is based on the Examination Blueprint which outlines the content of the examination. The Blueprint lists all of the competencies to be tested, as well as specifying other aspects of the examination such as types of questions, and the distribution of questions from each competency. The competencies are categorized according to the Dental Hygiene Model of Care. Copies of the Blueprint are available at a cost of \$10.00 from the NDHCB office.

Eligibility

Categories of eligibility to write the NDHCE are:

1. A student in a dental hygiene program accredited by the Commission on Dental Accreditation of Canada or the Commission on Accreditation of the American Dental

Association is eligible for examination upon confirmation by the dental hygiene program director or designate, that at the application date, the student is within four months of completion of their dental hygiene program.

2. A graduate of a dental hygiene program that was accredited by the Commission on Dental Accreditation of Canada or the Commission on Accreditation of the American Dental Association during the time the applicant was enrolled, is eligible for examination upon completion of application procedures.
3. A graduate of a non-accredited dental hygiene program that was not accredited by the Commission on Dental Accreditation of Canada, or the Commission on Accreditation of the American Dental Association during the time the applicant was enrolled, may apply for the examination following receipt of verification by the Application and Review Committee of the NDHCB that the applicant is eligible to write the examination.

Examination Dates

The NDHCE will be offered a minimum of three (3) times a year. Writing Centres are located at each dental hygiene program for the spring sitting and at least one location in each province for the fall and winter dates, depending on the number of candidate requests for a specific location. Application booklets can be obtained from the NDHCB office. The following are application deadlines and corresponding examination dates for the next spring and fall sittings:

Deadlines	Examination Dates
March 21, 1997	May 20, 1997
July 15, 1997	September 8, 1997

If you have any further questions about the National Certification Program please inquire in writing to:

National Dental Hygiene Certification Board
P.O. Box 58006, Orleans, Ontario K1C 7H4

Phone: (613) 837-2727 Fax: (613) 837-6971

RECONNECTING THE MOUTH TO THE BODY (continued from page 15)

19. Durack, D. T., Peterson, R. G.: Changes in the epidemiology of endocarditis. *An American Heart Association Symposium: American Heart Association* 1977, 52:3-8.
20. Croxson, M. S., Altman M. M., O'Brien, K. P.: Dental status and recurrence of streptococcus viridans. *Lancet* 1982, 1323-5.
21. Working Party of the British Society for Antimicrobial Chemotherapy. The prevention of infective endocarditis. *Lancet* 1982, 1323-5.
22. Santiga, J. T., Fekety, R. F., Bottomly, W.: Antibiotic prophylaxis for endocarditis in patients with a prosthetic heart valve. *Journal of the American Dental Association* 1976, 93:1001-1005.
23. Drapkin, M. S.: Endocarditis after the use of an oral irrigation device. *International Medicine* 1977, 84:4.

24. Limeback, H.: The relationship between oral health and systemic infections among elderly residents of chronic care facilities. *Gerontology* 1988, 7:131-137.
25. Loesche, W. J., Baum, B. J., Heft, M. W.: New research directions in gerontological aspects of periodontology. Ellen, R. P. ed., *Periodontal care for older adults*. Toronto: Canadian Scholars Press, Inc. 1992, 236-242.
26. Buller, D. L.: Team approach to oral health treatment of pre and post renal transplant patients. *Journal of Hospital Dental Practice* 1973, 144-147.
27. Harms, K. A., Bronny, A. T.: Cardiac transplantation: Dental considerations. *Journal of the American Dental Association* 1986, 112(5):677-681.
28. Regezi, J. A., Sciubba, J.: *Oral Pathology: Clinical Pathologic Correlations*. Second Edition. Philadelphia: WB Saunders 1993, p.5.
29. Health and Welfare Canada. *Oral Health in Canada: Facing the Future*. Unpublished report of the Steering Committee on Oral Health Promotion. National Health and Welfare Ottawa 1991.

CONTINUING EDUCATION CALENDAR

FEBRUARY

13 SKIN DISORDERS
IN DENTAL PRACTICE
Dr. Haydey
Manitoba Dental Hygienists' Association
Winnipeg, MB.....(204) 789-3331

18 PHARMACOLOGY
FOR THE DENTAL HYGIENIST
Mr. P. Mayo
NADHS
Edmonton, AB.....(403) 487-1701

21, 22 MEDICAL EMERGENCIES
IN THE DENTAL OFFICE
Dr. R. Boyar
Continuing Education
University of Manitoba
Winnipeg, MB.....(204) 789-3331

21 DENTAL IMPLANT CERTIFICATION
COURSE FOR DENTAL
HYGIENISTS, DENTISTS
Dr. Mark A. Kochman
Toronto, ON.....(416) 233-9454

MARCH

APRIL

18, 19 WHAT'S NEW IN DENTAL
PHARMACOLOGY? AND ORAL
PRODUCTS FOR HOME USE:
WHAT SHOULD I RECOMMEND?
Professor Karen Baker
Kootenay Dental Hygiene Society
Rossland, BC.....(250) 352-6079

MAY/JUNE

May 29-June 1
1997 ALBERTA DENTAL
HYGIENISTS' ASSOCIATION
ANNUAL PROFESSIONAL
CONFERENCE
Jasper, AB.....(403) 465-1756

JUNE

27-29 THE CDHA 8th ANNUAL
PROFESSIONAL CONFERENCE
"Dental Hygienists:
Professionals from Coast to Coast"
Ottawa, Ontario



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a CIRCLE of Dental Hygiene



CDHA is pleased to announce the introduction of a symbol of dental hygiene to circle the globe. Know your colleagues from around your area, province, country, world!

The creation of a unique Dental Hygiene ring, 10K gold set with an amethyst stone which in ancient time symbolized health care.

This ring is available to CDHA members for the cost of \$165.00

CDHA DENTAL HYGIENE RING

Please print clearly Date _____

Customer Name _____

Customer Address _____

City _____ Province _____

Postal Code _____ Phone () _____

10K Yellow Gold ☐ 10K White Gold ☐ Finger Size _____

Two payment options: You can pay in full for ring when ordering, or send a \$50.00 deposit and we will ship your ring C.O.D. for balance owing.

Hygienists ring with genuine amethyst stone 165.00

Shipping costs 10.00

Sub Total 175.00

G.S.T. 12.25

Ontario Provincial Tax (if you are an Ontario resident) . . (8%) _____

Total _____

Less Deposit _____

C.O.D. Balance Due

Visa and Mastercard accepted. Please insert card number with expiry date and sign. We will ship Priority Post.

Mastercard # _____

Visa # _____

Expiration Date _____

Signature _____

Please allow five to six weeks for delivery. Please mail order to:

ArtCraft CDHA Dental Hygiene Ring

P.O. Box 238, Carleton Place

Ontario, Canada K7C 3P4

Tel: (613) 253-0412 Fax: (613) 253-0407

ARTICLE:

An Investigation of Dental Hygiene Treatment Fear

Authors: Cynthia C. Gadbury-Amyot, RDH, MS
Pamela R. Overman, RDH, MS
Carrie Carter-Hansen, RDH, MS
William Mayberry, Ph.D.

Journal: *Journal of Dental Hygiene* Vol. 70 No. 3 May-June 1996

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It is well documented that fear of going to the dentist has a large part to play in patient avoidance of oral care. Up to 20 percent of Americans claim to experience morbid dental fear. The greatest areas of anxiety are local anaesthesia, the use of the drill, an unsympathetic or "cold" dentist, and fear of embarrassment, humiliation or loss of control.

The article first addressed some existing results and methodologies. A 1993 Dutch study which examined dental fears supported the view that 85 percent of participants were anxious during the actual process of dental hygiene treatment, and that 13.9 percent anticipated the treatment with anxiety for one month prior to the appointment. The authors then moved on to a discussion of the University of Washington Dental Fears Clinic theoretical model of dental fear. In this model, categories included fear of specific stimuli, distrust of the dental professional, generalized anxiety, and fear of catastrophe. Other researchers, using this model, have developed management strategies based upon these four subtypes of client fear.

The authors, using the revised 1969 Corah Dental Anxiety Scale (DAS)—now including dental hygienists as practitioners—assessed client fears about attending the dental office for a routine dental examination and "cleaning" by either an RDH or a DDS. The authors

report that, typically, the first scheduled appointment for new clients is with the dental hygienist (73.1 percent of the time). Because of this early contact, dental hygienists may well have a role in helping patients explore the basis of their dental fear. Careful discussion of the issue early in the process may help clients to overcome fears of pursuing necessary treatment, treatment which might, later, require expensive and involved interventions.

Two groups were surveyed. The first group comprised 150 clients from a general practice, and the second, 150 clients from a dental school intramural faculty practice. The first part of the survey addressed standard demographic data including age, race and education. This was followed by questions about fear associated with treatment rendered by a dental hygienist, with consideration for the four fear subtypes. Examples of items included "worrying about the dental hygienist hurting me", the sound of the scalers against the enamel, fear about remarks that the hygienist might make surrounding the client's care of their teeth, thoughts of fainting or loss of control, client fearfulness about being told that they have periodontitis or receiving other "bad" news.

The final item invited a response to this statement, "Overall, I find dental hygiene treatment more anxiety/fear producing than dental treatment."

Eighty-two percent of those surveyed admitted that dental hygiene treatment elicited no greater fear than dental treatment. Males reported dental hygiene fear less frequently than females and clients over 50 showed evidence of higher anxiety levels than those younger than 50.

ARTICLE:

Infection Control Protocols for Exposing and Processing Radiographs

Author: Charlotte J. Wyche, RDH, MS

Journal: *Journal of Dental Hygiene* Vol. 70 No. 3 May-June 1996

Although universal precautions are recommended for all client procedures, dental radiographs may require a specific additional protocol. The purpose of this article was to review the literature

surrounding this topic and to discuss the pros and cons of various methodologies of infection control specific to dental radiographs.

Cross-contamination through the exposure of dental radiographs is well supported by the research. Though the processing solutions can kill some bacteria, contamination in the dark room remains a concern. Some microorganisms (MO's) can remain viable as much

as 48 hours after inoculating the area. Others are present on the film even after the completion of the drying cycle. Studies cited in the article noted that MO's were also found on loading trays, processor rollers and inlet and outlet ports.

The authors survey of dental hygiene educational programs concluded that the teaching of infection protocols varied. Ninety-four percent reported that a separate protocol for the handling of radiographs existed, but most, for example, did not routinely include the disinfection of the parts of the processor. A 1990 study of radiographic infection control reported that the American Dental Association (ADA) guidelines were not being followed. Less than half of the participants routinely disinfected the external parts of the exposure equipment (tube head, exposure buttons), wore gloves while opening the film packets, or removed their gloves prior to feeding the films into the processor.

Under "Guidelines and Practical Information" the authors provide several recommendations developed by a number of authorities including the ADA, the American Association of Oral and Maxillofacial Radiology (AAOMR), Eastman Kodak and the Centres for Disease Control and Prevention. They include:

- developing a written infection-control policy for the exposure and processing of dental radiographs
- using universal precautions with all clients
- developing a "no touch" method
- opening film packets and dropping the films, without touching them, onto an uncontaminated surface or paper towel
- discarding gloves and film packets
- putting on new gloves to place films in processor
- avoiding the use of daylight loaders on developers

If using a daylight loader:

- change gloves before placing films into the daylight load and remove gloves before withdrawing hands
- place films in a clean paper cup with washed hands
- reglove and place hands through cuffs,
- remove gloves after loading films and before removing hands from cuffs
- use overgloves when not regloving
- use surface disinfectants to treat the film packets, as you would for any environmental surface (5.25 percent bleach for 30 seconds was one suggestion)

The paper concludes by stating that a number of dental hygiene education programs may not be teaching appropriate infection control methods for managing dental radiographs, and recommends that educators follow the ADA and more specifically the detailed outline of the AAOMRs recommendations in this area. Further, the article points out that many dental offices are not following standardized asepsis guidelines. A useful table showing the advantages and disadvantages of specific infection control methods is provided for reference.

Because there is clear evidence that cross-contamination during radiographic procedures exists, I would strongly recommend that clinicians read this article for a detailed review of the literature. Private dental hygiene practitioners will find many of the recommendations valuable and will be able to increase the awareness of infection control for radiographs, for the entire dental team.



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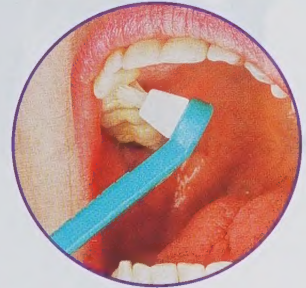
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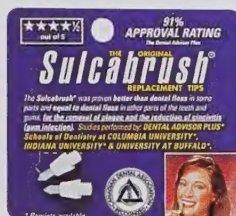
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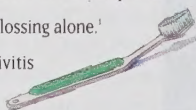


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1. Overholser CD et al. Comparative effects of two chemotherapeutic mouthrinses on the development of supragingival dental plaque and gingivitis. *J Clin Periodontol* 1990;17:575-579.

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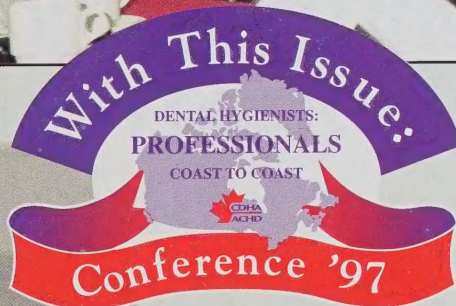
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THE HEALTH CARE REVOLUTION:

Will Dental Hygiene Sink or Swim?

Canadian health care has evolved rapidly since the Second World War. In this decade, however, the pace and extent of change have become revolutionary.

Several factors are driving that revolution, notably the demographic greying of the population, advances in health care and information technology, and the growth in the number and enhanced competencies of health professions. The most important factor of the revolution is the financial pressure that federal, provincial and municipal governments face. Governments simply cannot continue to fund health care as they have before. Cost-containment, cut-backs, "de-listing" of services, the privatization of health care delivery, and an unrelenting search for increased efficiencies, are now the order of the day.

This means that governments, workers' compensation boards, employers and insurance carriers who pay for health care will increasingly demand to know "outcomes"—objectively-verifiable measures—from all professions for the treatments they provide. As well it seems clear that they will place an increased emphasis on effective preventive care. We'll see the growth of a two-tier health care system and of managed care in both the publicly and privately-funded systems. We'll see increased competition among professions and practitioners and a displacement of health care workers from institution-based, to community-based care and private practice. We'll see more and more unregulated practitioners providing various types of "alternative" health care.

An important part of the revolution is the devolution of the responsibility for health care from the federal to provincial governments. In some provinces the devolution has gone further, from the provincial to municipal governments or regional authorities. In Alberta, for example, the government set up a network of regional authorities, each with their own funding envelopes, to purchase and co-ordinate health care services. In Ontario, responsibility for long-term care (nursing homes, homecare, Meals on Wheels, etc.) is being devolved to municipalities.

In Canada, health has always been a provincial responsibility. In the 1960s, however, the federal government bought considerable leverage over the health care system by providing money to the provinces explicitly for health care and passed the *Canada Health Act* to define principles and standards for a national, publicly-funded system. Recent federal cut-backs in these transfer payments and the lumping together of social and health transfer payments in the Canada Health and Social Transfer mean that Ottawa will not be able to retain its leadership role in health care.

As a result of this, there is a real risk of the balkanization of health care, with provinces establishing their own policies and standards. In those provinces that down-load health care to the municipalities there will be even more fragmentation, with some municipalities being simply unable to fund accessible quality health care. In this environment, the preservation of national standards and the portability of health care benefits within a publicly-administered system become increasingly difficult, perhaps impossible. A manifestation of this balkanization is the recent breaking away of several provinces from the federal-provincial process to develop a national primary care model.

Some might claim that the erosion of federal power reduces the role for national health care associations such as the CDHA. In fact the opposite is true. In an increasingly fragmented and competitive health care environment, an effective national association is essential for national cohesion, consistent standards and inter-provincial mobility within the profession. In fact, the fragmentation of health care delivery will test professional cohesion.

Regional authorities in Ontario and Alberta require health care professionals to bid in order to provide health care services. Practitioners in the same profession find themselves bidding against each other in order to stay in business, and, as happened in Alberta, the professions' fee guides are usually the first casualties. Although the rhetoric maintains that quality is paramount, the incessant demands for savings inevitably erode quality of care and put pressures on professional standards of practice.

Although the revolution in health care presents unprecedented challenges, it also presents unprecedented opportunities for dental hygiene. Because much dental hygiene care is provided outside of the publicly-funded system, it is not being immediately affected by the revolution within the publicly-funded health care system. While this gives dental hygiene some breathing space, it doesn't give it much.

Health Care Revolution... (continued on page 48)



Don Gracey is a partner at C.G. Management and Communications, a public affairs firm based in Toronto, Ontario. Prior to joining the firm, Don's had a career in government where his positions included Assistant Secretary, Department of the Prime Minister and Cabinet (Australia), Senior Officer, Privy Council Office (Ottawa) and Assistant to the federal Minister of Agriculture.

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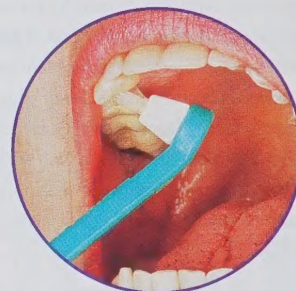
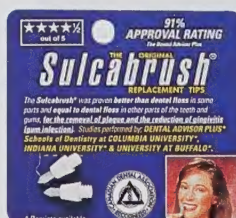
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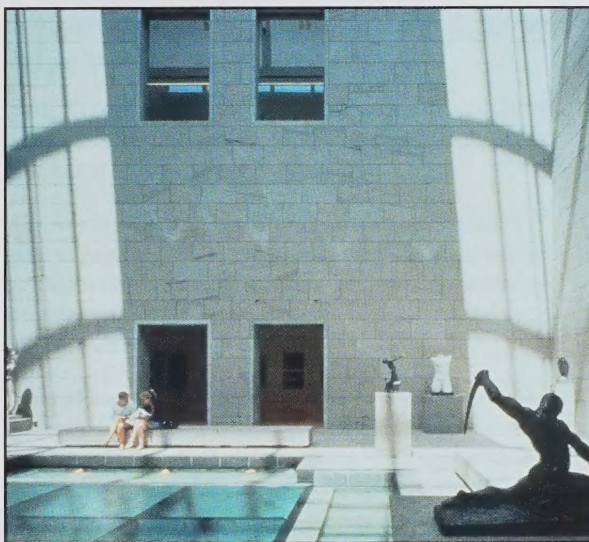
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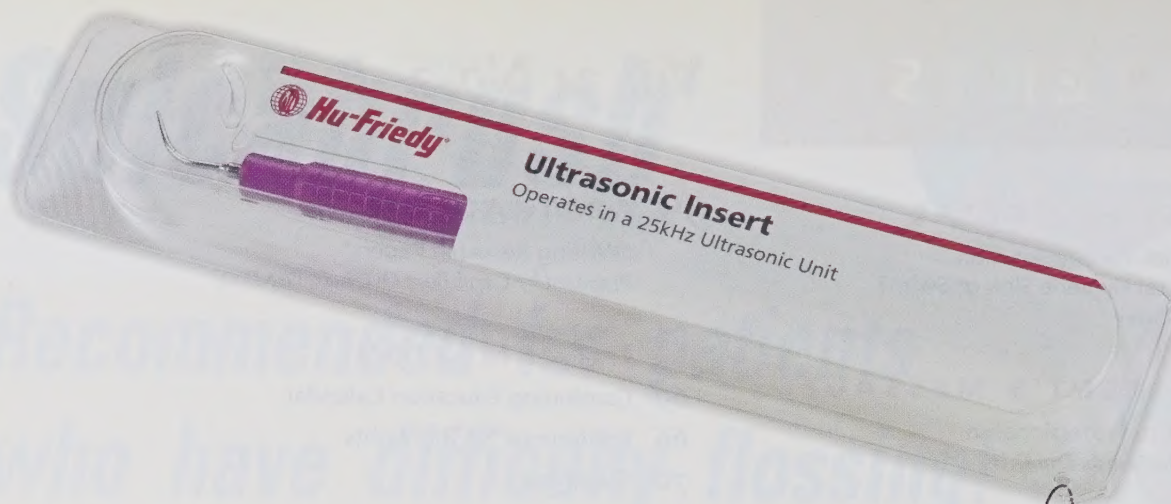
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This year our family moved house. During the move, I tucked a few boxes of memorabilia in a corner, figuring that I would get to them some rainy day. A few weeks ago that day finally arrived and as I unpacked the box, I found myself drifting into nostalgic memories of my early professional awakening.

A typed program reads "Capping Ceremony, School of Dental Hygiene, Dalhousie University, April 13, 1972". Inside is a list of the first year students, and beside them, the names of the second year students who were placing the caps on the first year inductees. I was a placer. A classmate read a now forgotten epiphany on the significance of "The Cap". Following the Capping Ceremony, we all chanted the Dental Hygiene Pledge in unison:

"I do solemnly pledge to hold high the standards of the dental hygiene profession, to abide always by the principles of ethics, to honour all members of this and the dental profession, to practice my profession to the best of my knowledge and ability, and to base my work as a dental hygienist on these words: Knowledge is the treasure, Practice is the key to it."

Images of bell-bottom jeans, love beads and tie-dyed shirts came rushing in... memories of "pre-hygiene" university life, when I had an abundance of time and did as my mood dictated. I was in control. I was a free spirit.

Then came the shock of Dalhousie School of Dental Hygiene. It was like the military I thought. Worst of all, there were structured class schedules, starting every morning at 8:30 a.m. and never finishing before 5:00 p.m., five days a week. There were those white, polyester uniforms—though our class was radical enough to convince the administration that we were entitled to wear the "pant-suit" style rather than the matronly dresses. There were the white duty shoes (I still have images of borrowing polish before Clinic). There was the rule that not a strand of hair should touch the collar, necessitating the daily locker room course in "Hair Creativity 100", to achieve compliance with glamour intact. Gone was the personal touch of being called by my first name. The title of "Miss or Mrs" was firmly enforced—stuffy, but kind of nice for one so young. And being told to keep my nails cut short! Now *that* was infringing on my pre-hygiene freedom.

Yes indeed, the expectations here were those of the real world; regimen and structure, even in the wild and liberated 60s and 70s. I'm not sure when I will be brave enough to tell my envious daughters, who pine for the 60s in their dress, music, style and attitude, that

not all of us were flower children, some of us can't even remember being there. In time, the resistance to structure and authority faded, replaced by the special bonding of would-be professionals.

Well, the caps did come off, both physically and psychologically. I have no regrets. They were cumbersome and dated. Now the only presence they have is in the old photographs on the walls of Dalhousie School of Dental Hygiene. I never did locate the speech on the significance of "The Cap", but what I have never lost is the wonderful feeling of belonging to a worthwhile profession, which that first cap so poignantly symbolized.

The cap represented the mix of rules, regulations, responsibilities and, most of all, the caring commitment to dental public health expected of a "professional" dental hygienist.

That wonderful school instilled in my young student eyes, a sense of pride, self-worth and public service that made my first paycheque such a joy to receive. I still have fond memories, and a continuing sense of appreciation, for Director Kate McDonald and her faculty team.

I have no knowledge of the origin of the Dental Hygiene Pledge, nor do I know if it remains a canon of hygiene schools today. Schmaltzy as it sounds, it has stood the test of time. The Capping Ceremony was the first of many moments of pride in my chosen profession. I am happy for the memories. I know now that what I have cannot be lost with the loss of a simple piece of paper. I have learned that it is not so hard to move beyond these memories, when what lies ahead holds equal promise of renewed pride and achievement.

After 25 years of work in the ivory pits, I still look forward with the same enthusiasm (if not energy) as I had back then. While reading pledges in unison may have lost its sheen, a sense of pride and achievement in the maturing of our profession is a more than ample substitute. I hope each of you can find in your special box of memories, the inspiration to maintain a pride and commitment to our chosen profession.



Sue MacIntosh is a private practice dental hygienist living in New Glasgow, Nova Scotia. She is married and has four daughters ranging in age from twelve to twenty-one years.

CDHA JANUARY 1997 BOARD MEETING HIGHLIGHTS

CDHA Board Members Present Proactive Workplans for 1997

40

Despite well-thought-out agendas for day and evening sessions, there was still too much to accomplish in the time allotted to board members when they gathered in Ottawa from January 30 to February 2 to formulate and present their workplans and budgets for the coming year. "When you have a working, volunteer board like ours," said Sue MacIntosh, President of CDHA, "people go home tired. But the good news is that they're fired up and eager to get on with their workplans because they own them. The personal commitment to professional excellence is quite astounding."

Professional growth in changing, challenging times emerged as the central theme of the meeting. The four board councils met in plenaries and in small groups to test ideas, get input on direction and receive feedback on proposed plans. Desktop computers churned as each council strove to fine tune and polish its workplan presentation for Sunday's plenary session.

Building on the goals framework they established last October, the Access and Advocacy Council identified work to be done on its five key objectives. For example, it will support self-governance in Saskatchewan, Manitoba, New Brunswick, Prince Edward Island, Nova Scotia, Newfoundland, the Northwest Territories and the Yukon with the establishment of a dental hygiene registrar by the year 2000. Communicating CDHA's message to internal and external audiences was presented as another goal, and plans are underway to present a "Current Trends" workshop at the June board meeting.

The Health Policy and Promotion Council announced that its objectives for 1996 will carry over into 1997. And it identified two critical issues for special attention: increasing collaboration with similar health professionals and changes to dental hygiene practice, particularly the move to alternate practice settings. The council will continue to foster the relationship it has established

with the Canadian Public Health Association on its literacy and health project and also with Health Canada on its Family Violence Awareness Project. Other networking opportunities were identified: the Canadian Association for Community Care, the Palliative Care Association, the Fédération Dentaire Internationale Health Promotion Conference and the Hospital Accreditation Council. A Community Initiatives Forum is planned for the June conference.

The Education and Research Council presented seven activities in support of its twin goals of advancing dental hygiene education and promoting quality dental hygiene research. It plans to adopt the "CDHA Framework for Dental Hygiene Education," complete a CDHA Dental Hygiene Competencies document and support post-diploma programs by establishing a task force to develop learning outcomes for baccalaureate, master and doctorate level dental hygiene programs. Baccalaureate graduates who achieve academic excellence will be recognized by CDHA. Once again, fostering research opportunities was identified as an important activity for the council, to be continued despite loss of some sponsorship support.

The Quality Practice Council announced its quality assurance workshop called "Motivation to Move: Tools for Professional Growth" which has been developed by Mickey Wener, Sheryl Feller



1. Barb Long, outgoing chair of Access and Advocacy Council, was presented with a thank-you plaque for her dedicated work on behalf of CDHA. She's off on a three-year posting to Australia with her family.



2. Mickey Wener (l) chats with Lynn Guest (r): "It's helpful to sit in on these sessions just to immerse myself in the critical issues and listen as board members respond. In developing CDHA workshops, you have to capture the tone as well as the content of the message."

3. Sandra VanWart (l) and Alanna Code (r): A meeting highlight was the introduction of the office staff and board members. As Carol Matheson Worobey introduced the staff, board members were heard to call out spontaneously "So that's who you are!"

STUDENT DENTAL HYGIENISTS' WORK VALUES:

A Measure of an Emerging Profession?

Abstract

The purpose of this study was to compare the work values of students in the School of Dental Hygiene and the Faculty of Dentistry at the University of Manitoba, Canada, both with each other, and with national samples of Canadian practitioners in both fields. The study was an outgrowth of a larger study measuring the work values of graduating students in six faculties selected to represent the occupational classification system of John Holland. The English version of the Canadian form of the Values Scale which measures 20 work and life values, was used in this study. Differences in values found between the student hygienists and practitioners in both dentistry and dental hygiene may indicate a growing desire for professional status by dental hygienists. Value differences found between practising dentists and hygienists may reflect a traditional hierarchical relationship between these occupations. Limitations of the study and future research questions are discussed.

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The concept of work values has probably been around for as long as work itself, since it is difficult to imagine how anyone could engage in such activity without having some preferences, or evaluative feelings, about it. Although the nature and meaning of work has evolved over time and across cultures, in modern industrialized societies the importance of the work role in many people's lives is obvious.¹ Not surprisingly, social scientists and educators in North America and elsewhere have demonstrated both theoretical and research interest in the phenomenon known as career development. The emergence of the vocational guidance movement at the turn of the century², and the subsequent contributions of several career development theorists/researchers, have greatly enhanced our understanding of the stages and processes of career development.³⁻⁶ An important aspect of this process is the role played by our emotional preferences for work ("work values") in career decision-making, and ultimately, in job satisfaction.

Mitchell and Krumboltz have provided a comprehensive review of the theories and research related to decision making in general.⁷ In the specific realm of values and career decision making, various writers have contributed to our understanding of how work values influence career choices and job satisfaction.⁸⁻¹⁵ The development of the Theory of Work Adjustment by Lofquist and Dawis¹⁰, and their documentation of the differences in preferred work "reinforcers" among occupational groups, has been a major contribution to applied psychology. (Note: To avoid confusion, the present authors will use the more traditional expression, work values, to describe the reinforcers, satisfactions, or rewards that people seek from their work when they speak of job satisfaction).

Essentially, Lofquist and Dawis theorized that work adjustment is a twin function of "satisfactoriness" (a correspondence between a worker's abilities and the demands of the job), and "satisfaction" (a correspondence between an individual's needs and the reinforcers that the work setting can provide). In career counselling and employee selection, satisfactoriness is largely concerned with determining if

an individual possesses the skills and abilities (or at least the potential) to be competent in a particular occupation. Satisfaction, on the other hand, is largely determined by the suitability of an individual's interests, personality traits, and values for a particular occupation. While considerable research interest has been focussed in the past on the vocational abilities and interests needed for many occupations, more recent research interest has been directed to an examination of the values of workers in various occupations and educational programmes.¹⁴

The present study was, in fact, a serendipitous outgrowth of a larger research project conducted by the principal investigator at a Canadian university. The initial project was designed to compare the work values of six student groups, which included students in the Faculty of Dentistry, with each other, and with their professional counterparts. The student practitioner groups were chosen to represent the six major work environments defined by Holland's occupational classification system, widely accepted as the cornerstone of modern career planning⁵ (Table 1 contains a working definition of the Holland model prepared by the first author). The School of Dental Hygiene, a division of the university's Faculty of Dentistry, was added as a "study within a study" to explore several research questions of interest to the second author, and to add further support to the primary research concerning work values in relation to Holland's model.

In career development terms, the Holland model is a Person X Environment matching process which initially assesses an individual's occupational "type", and then relates that type to appropriate occupations which have been identified and coded by job analysts. The code consists of the initial letters of the three most important Holland categories; for example, dentists are coded ISR to indicate that most members of that profession prefer Investigative, Social, and Realistic work activities, in that order of importance. The other Holland categories, Artistic, Enterprising, and Conventional, are less preferred as work activities by dentists, but may well be sources

for their leisure activities or hobbies. Dental hygienists are coded SAI to reflect their preferences for Social, Artistic, and Investigative work activities. Both occupational groups obviously share common interests (Investigative and Social), but according to the Holland model, members of each occupation should derive more job satisfaction from their primary preferences.

This would imply that dentists (as primary Investigatives) would derive their greatest job satisfaction from the "intellectual" aspects of their work, for example their scientific knowledge, their professional expertise, their need to be constantly learning. Dental hygienists (as primary Socials) would be expected to derive their greatest satisfactions from the "social" aspects of their work, for example interacting and communicating with patients and co-workers, having a positive impact on the behaviour of others and generally being supportive or helpful. Since these different activities are preferred by the members of each profession, they are in a sense "valued", or sought, as reinforcements for working.

The major research questions in the present study were:

1. Would dentists' and dental hygienists' work values differ in the direction predicted by the Holland model, i.e., would dentists prefer values consistent with the Investigative work-type, and would dental hygienists' values correspond more closely to the Social work-type?
2. If value differences were identified, how might they affect the shared workplace?, and

3. Would a recognition and appreciation of the possibly distinctive nature of dental hygienists' work values be helpful in establishing their professional status, an apparent goal of the occupation's membership?¹⁶

Method

SUBJECTS

The student subjects included the entire 1995 graduating class (m=1, f=23) in the two-year programme at the School of Dental Hygiene, and 18 students (m=10, f=7, no gender=1) from third and fourth years in the Faculty of Dentistry at the University of Manitoba. The average reported ages for the dental hygiene and dentistry students were 25.1 and 25.9 years, respectively.

National samples of professional subjects were obtained in the spring and summer of 1995 with the cooperation of the Canadian Dental Association and the Canadian Dental Hygienists' Association. Both professions provided the researchers with stratified random samples of 50 members. Responses were received from 28 (56 percent) dentists (m=21, f=5, no gender=2), and from 34 female dental hygienists (68.0 percent). The mean reported age for dentists was 46.0 years (range 30–75), and 38.4 years for hygienists (range 26–50). The educational preparation of dental hygienists in Canada takes place in universities or community colleges, culminating in a Diploma in Dental Hygiene. However, 10 of the 34 respondents indicated that they also held an unspecified university degree.

Table 1
DEFINITIONS OF HOLLAND'S OCCUPATIONAL TYPES

Holland Category	Definitions/Examples
Realistic	People who are interested in, and are skilful at, working with things (tools, machinery, equipment, animals) or in practical, technical, or productive ways. Typical careers: Engineering, Law Enforcement, Forestry, Agriculture, Skilled Trades.
Investigative	People who prefer considerable mental activity in their work—solving problems, analyzing situations, using knowledge, learning, researching, studying and understanding. Usually interested and skilled in the physical, biological, or social sciences and/or mathematics. Typical careers: Physician, Computer Analyst/Programmer, Sociologist, Chemist, Optometrist.
Artistic	People who enjoy creating, designing, writing, performing, inventing, and using their imagination. Typical careers: Architecture, Interior Design, Music, Fine Arts, Journalism, Broadcasting.
Social	People who like to help others in some way—teaching, healing, treating, ministering, supporting, guiding, developing, nurturing, assisting. Typical careers: Education, Social Work, Nursing, Speech Therapy, Religion, Recreation, Family Studies.
Enterprising	People who like to manage, organize or supervise the work of others, advance in their careers, influence or persuade others, or be involved in business or finance. Typical careers: Management, Merchandising, Real Estate, Sales/Marketing, Business Owner, Stock Broker.
Conventional	People who like to be organized, efficient, accurate, systematic, precise and orderly. Work often involves information processing, numerical or financial record-keeping, or clerical skills. Typical careers: Accounting, Banking, Financial Analyst, Administrative Assistant.

MATERIALS

The Values Scale, developed by Nevill and Super¹³ for use with American populations, was an outgrowth of the International Work Importance Study.¹² This major study, involving 16 nations, reviewed and defined work values common to those cultures. The study also explored the salience of various roles (student, worker, citizen, homemaker, and "leisureite" in these populations. A Canadian version of the Values Scale was developed and normed on anglophone and francophone students and working adults by Fitzsimmons, Macnab, and Casserly¹⁸. The Canadian questionnaire consists of a total of one hundred items measuring the 20 work values (five different items per scale). Possible responses to the items range from 1 = of little or no importance to 4 = very important. Therefore, the minimum and maximum scores for each of the 20 scales ranges from 5 to 20. Descriptions of the values are contained in Table 2.

Similar to the parent scale, the Canadian version of the Values Scale has demonstrated satisfactory reliability and validity with secondary, post-secondary, and adult populations. Median internal consistency coefficients (Cronbach's alpha) for post-secondary and adult anglophone samples are 0.83 and 0.80, for example. Test-retest reliabilities (six weeks) with anglophone high school students ranged from 0.63 to 0.82, with a median of 0.69. The validity of the Values Scale has been established on several levels. Face validity was ensured in the creation of items by specialists from the original participating countries. Construct validity for the 20 scales in the Canadian version has been demonstrated by the developers with a principal components analysis. Convergent and discriminant validity have also been demonstrated in a multitrait-multimethod analysis using the Values Scale, the Minnesota Importance Questionnaire, the Work Aspects Preference Scale, and the Work Values Inventory.¹⁹

PROCEDURE

The graduating classes in both Dentistry and Dental Hygiene were asked to be voluntary participants in the study. In the case of Dentistry, a low response from the graduating class necessitated that students in the third year of the programme were subsequently approached to obtain an adequate sample. All students were given the English version of the Values Scale and were advised to code their answer sheets

Table 2
DESCRIPTORS OF VALUES

Values	General Description of the Values
Ability Utilization	Use and develop your skills, abilities, and knowledge
Achievement	Get results, meet your goals, do well
Advancement	Get ahead or be promoted, progress in your career
Aesthetics	Appreciate/contribute beauty in/through your work
Altruism	Help, or serve, others
Authority	Manage, lead, or be in charge of others
Autonomy	Act on your own, manage yourself
Creativity	Be creative, inventive, or innovative
Economics	Have a high standard of living, be financially secure
Life Style	Live and work according to your own ideas and values
Personal Development	Develop as a responsible/competent worker and person
Physical Activity	Get a lot of exercise, stay fit and active
Prestige	Be admired and recognized for the things you do
Risk	Take risks or chances in the things you do
Social Interaction	Do things/work with other people more than be alone
Social Relations	Work and socialize with friends or people you like
Variety	Change activities, tasks, or conditions frequently
Working Conditions	Work in a safe, comfortable, well-equipped environment
Cultural Identity	Be accepted as a member of your race, religion, or ethnic group
Physical Prowess	Work hard and use your physical strength

Note: Adapted from the Administrator's Manual for the Life Roles Inventory (1985). Used with the permission of the publisher, Psychometrics Canada Ltd., 7125-77 Avenue, Edmonton, Alberta, T6B 0B5.

if they desired anonymity. Questionnaires were collected a week later. Debriefing sessions were made available to both student groups. The professional participants were contacted by mail with the same instructions regarding confidentiality, however, respondents wishing to receive individual and group results were expected to identify themselves to the researchers. The English language version of the Values Scale was used with the practitioners as well.

RESULTS

Due to the number of dependent variables involved (20 values), the probability of concluding that differences between groups on the variables are "significant", that is not due to chance, would be inflated by performing 20 separate analysis of variance (ANOVA) procedures. To control for such possible errors, and also to take into account any correlation between the variables, a multivariate analysis

Table 3
MEANS, STANDARD DEVIATIONS, AND ANOVA RESULTS FOR THE DENTAL GROUPS

	Student Hygienists (n=24)		Student Dentists (n=18)		Professional Hygienists (n=34)		Professional Dentists (n=28)		
Values	M	SD	M	SD	M	SD	M	SD	F
Ability Utilization	17.5	(2.2)	17.2	(2.9)	16.4	(2.2)	17.7	(1.8)	1.68
Achievement	17.5	(2.0)	16.7	(2.8)	16.6	(2.2)	17.8	(1.9)	1.61
Advancement	15.7	(3.0)	14.9	(2.5)	13.5	(3.1)	14.4	(2.4)	2.80*
Aesthetics	15.9	(3.0)	15.1	(2.6)	14.3	(3.2)	15.8	(2.5)	2.36
Altruism	18.1	(2.0)	18.0	(2.0)	16.0	(2.9)	17.0	(2.7)	4.03**
Authority	14.4	(2.0)	15.9	(1.7)	13.6	(3.0)	15.9	(2.3)	5.39**
Autonomy	17.2	(2.6)	17.3	(2.4)	16.3	(2.6)	16.9	(2.3)	0.80
Creativity	12.7	(2.9)	13.8	(3.9)	13.9	(3.3)	14.5	(2.9)	1.34
Economics	18.3	(2.0)	16.7	(3.5)	17.2	(2.3)	16.6	(2.2)	2.53
Life Style	16.0	(2.7)	16.4	(3.4)	15.4	(2.3)	15.7	(2.3)	0.60
Personal Development	18.2	(1.7)	17.7	(2.2)	18.2	(1.6)	18.0	(1.9)	0.33
Physical Activity	15.8	(3.1)	15.8	(3.9)	14.8	(3.2)	14.7	(3.1)	0.85
Prestige	17.5	(2.3)	15.9	(2.8)	15.5	(2.5)	16.8	(2.4)	2.92*
Risk	10.3	(3.1)	9.7	(3.4)	10.2	(3.2)	8.6	(2.8)	1.60
Social Interaction	14.6	(2.9)	14.4	(2.9)	13.1	(3.6)	13.2	(2.8)	1.66
Social Relations	18.5	(1.3)	17.9	(2.3)	16.8	(2.8)	16.8	(2.3)	3.82*
Variety	14.6	(3.1)	14.1	(2.2)	13.3	(2.8)	12.5	(2.2)	3.36*
Working Conditions	17.4	(2.3)	16.8	(1.9)	16.1	(2.5)	15.7	(2.4)	2.51
Cultural Identity	15.0	(2.7)	13.6	(3.4)	13.1	(3.5)	13.1	(2.4)	2.49
Physical Prowess	9.3	(3.2)	10.2	(4.1)	10.0	(3.4)	8.8	(3.0)	0.87

* $p < .05$ ** $p < .01$

of variance (MANOVA) should be first performed to test for main effects.²⁰ The MANOVA for the Values Scale variables resulted in a significant main effect for both Dental groups ($F_{\text{app}} [60,227.6] 2.18, p = .0001$), and for Gender, ($F_{\text{exact}} [20,75] = 3.13, p = .0002$). These significant MANOVA results justified univariate analysis (ANOVAs) of the 20 values for the Dental and Gender groups, to determine which dependent variables had contributed to the multivariate results.

Significant differences between the dental groups were found on the following values: Advancement, Altruism, Authority, Prestige, Social Relations, and Variety. Means, standard deviations, and ANOVA results are reported in Table 3.

Post-hoc multiple comparison tests (Tukey's HSD test) on the dental groups, revealed higher average ratings by student hygienists over dental hygiene practitioners on the values of Advancement, Altruism, Prestige, and Social Relations. These differences would not have been predicted by the Holland model, nor by Sakamura's earlier research, which found consistency in the values of student hygienists, practitioners and instructors at the University of Missouri–Kansas.¹⁷ In the current study, student hygienists also placed more importance than graduate dentists on Social Relations and Variety. The greater emphasis on Social Relations was consistent with the theorized differences between Social and Investigative types.

Student dentists, on the other hand, rated the values of Altruism and Authority, higher than graduate hygienists, providing somewhat inconsistent results. Although the Holland model would normally predict a greater emphasis on Altruism by the hygienists, perhaps in developmental terms the dental students (like the dental hygiene students?) may value the humanitarian aspect of their work more highly at the beginning of their careers. However, the student dentists' greater emphasis on Authority was consistent with the expertness normally associated with the Investigative type in Holland's system.

Interestingly, no significant value differences were found between the student hygienists and student dentists, nor between the student dentists and graduate dentists. While the latter results were anticipated by the Holland model, the similarity in the student values were not expected. The results are summarized in Table 4.

While not customarily reported in the literature, near-significant ($p < .10$) differences were noted for the values of Aesthetics, Working Conditions, Economics, and Cultural Identity. These findings are reported here only for the possible interest of other researchers, since the largest differences between the average ratings for those values were again in the direction of student hygienists over practicing hygienists (Aesthetics and Cultural Identity); and over practicing dentists (Economics and Working Conditions).

The ANOVAs for Gender revealed significant differences for Personal Development and Variety (both preferred by females); and Authority (preferred by males). Since the total Dental Hygiene sample was nearly exclusively female ($f=57, m=1$), the higher female rating for Personal Development and Variety are obviously heavily influenced by the preferences of the female dental hygienists. Conversely, the higher male rating for Authority is probably attributable to male dentists who predominated in the Dentistry samples ($m=31, f=12$). The results are summarized in Table 5.

A separate *post-hoc* multivariate analysis (MANOVA) was performed to compare the values of only the practising dentists and dental hygienists. This was done for exploratory purposes in an attempt to identify possible differences between the two national samples which might have been obscured in the four-group student-practitioner analysis. The multivariate result, ($F_{\text{exact}} [20,40] = 2.65, p = .004$), again provided statistical justification for the univariate analysis of the dependent variables. Table 6 summarizes the means, standard deviations, and ANOVA results for the dentists and hygienists.

The analysis revealed a pattern in the value orientations which seemed to reflect the expected theoretical Holland occupational preference by dentists for values characteristic of Investigative types. Mean scores for dentists were greater than the hygienists on the following values: Ability Utilization, Achievement, Authority, and Prestige. An unexpected finding, at least in terms of Holland's model, was the dentists' higher rating on Aesthetics, a value normally associated with the Artistic work preference, the secondary preference of dental hygienists in the Holland system. Although both groups presumably are interested in improving their patient's

Table 4
SIGNIFICANT GROUP DIFFERENCES IN WORK VALUES

Values	Dental Group Differences (Means)
Advancement	Student Hygienists (15.7) > Professional Hygienists (13.5)
Altruism	Student Hygienists (18.1) > Professional Hygienists (16.0)
	Student Dentists (18.0) > Professional Hygienists (16.0)
Authority	Student Dentists (15.9) > Professional Hygienists (13.6)
	Professional Dentists (15.9) > Professional Hygienists (13.6)
Prestige	Student Hygienists (17.5) > Professional Hygienists (15.5)
Social Relations	Student Hygienists (18.5) > Professional Dentists (16.8)
	Student Hygienists (18.5) > Professional Hygienists (16.8)
Variety	Student Hygienists (14.6) > Professional Dentists (12.5)

$p < .05$

Table 5MEANS, STANDARD DEVIATIONS, AND
SIGNIFICANT ANOVA RESULTS FOR GENDER

	Females (n=69)		Males (n=32)		
Values	M	SD	M	SD	E
Authority	14.3	2.6	15.9	2.3	7.06**
Personal Development	18.3	1.6	17.5	2.0	4.74*
Variety	14.0	2.8	12.5	2.4	6.72*

* $p < .05$ ** $p < .01$ **Table 6**MEANS, STANDARD DEVIATIONS
AND SIGNIFICANT ANOVA RESULTS FOR
CANADIAN DENTISTS AND DENTAL HYGIENISTS

	Dentists (n=28)		Dental Hygienists (n=34)		
Values	M	SD	M	SD	F
Ability Utilization	17.7	1.8	16.4	2.2	5.87*
Achievement	17.8	1.9	16.6	2.2	5.07*
Aesthetics	15.8	2.5	14.3	3.2	4.27*
Authority	15.9	2.3	13.6	3.0	10.81*
Prestige	16.8	2.4	15.5	2.5	4.26*
Risk	8.6	2.8	10.2	3.2	4.33*

* $p < .05$ ** $p < .01$

dental "appearance", perhaps dentists are expected/trained to place greater importance on that aspect of their work. Other anticipated differences in favour of hygienists, such as Altruism, Social Interaction, and Social Relations were also not supported by this study. However, hygienists were more prepared to accept Risk in their work, although in terms of practical, or "clinical significance", the ratings by both groups indicated that risk was more to be avoided than sought as an aspect of work.

Discussion

This study provided an opportunity to validate Holland's career typology by comparing the work values of both students and practitioners in two related, but theoretically different, occupational groups. According to the Holland model, *dissimilarities* in work

values between *different* occupational groups should be expected, and be in the direction postulated by the model, as should *similarities* in values be expected within the *same* occupational groups. The study also offered an opportunity to examine the possible impact that differences in work values might have in the dental workplace, and possibly to shed some light on the occupational expectations of the next generation of dentists and dental hygienists.

Holland's theory was partially supported in this study by the finding that practising Canadian dentists and dental hygienists appear to have important value differences. Also, as predicted, no differences were found between student and graduate dentists, suggesting that the next generation of dentists may share the same expectations for job satisfaction as their predecessors. However the fact that no value differences between the two student groups were found was an unexpected result, as was the finding that value differences between student and graduate hygienists were considerable. This latter contradiction of Holland's assumptions raised interesting questions about the source of these unexpected differences. If Holland is correct that homogeneity in values should be expected within an occupational group (as Sakamura's¹⁷ research had documented—albeit with a different values instrument), how are we to interpret the differences between student and graduate dental hygienists identified in this study?

As with any cross-sectional study, comparisons between different groups over time are necessarily tentative since the results may in fact only confirm that we have compared apples and oranges. We do not know, for example, if the practising dental hygienists in this study initially differed in their value preferences from this particular graduating class of hygienists, or whether several years of work experience have simply affected the practitioners' original values. For whatever reasons, these generational value differences did not appear in the samples of student and professional dentists, raising the possibility that more than the passage of time may be contributing to the differences between the dental hygiene groups. It should also be noted that other methodological considerations—such as whether the samples of student dentists and hygienists are representative of other educational programmes, may have some bearing on these results.

However, in spite of these possible limitations, several speculative observations can be made about these results. It would appear, for this class of dental hygiene students at least, that they are likely to expect different sources of satisfaction from their careers than do their predecessors. Specifically, the student hygienists probably expect to have more opportunities for advancement, status, social relationships, and caregiving. This may be of some significance to their future employers, as might the differences found between the student hygienists and dentists on the importance of social relationships and variety in work. If one also allows for the reported near-significant differences between the student hygienists and practising dentists in the importance of economic and working conditions, it is reasonable to conclude that for these student hygienists' expectations to be met, some adjustments in the status quo would be necessary.

An unanswered question raised by these results, hopefully grist for other researchers' mills, relates to an understanding of the apparent "generational" differences in work values between student and practising hygienists. One explanation may be that these differences are indicative of attitudinal changes among younger hygienists in general, which may also have been reflected in other research related to the aspirations of dental hygienists for professional status.¹⁶ Although, as Stamm has noted²¹, there are many objective, if not legal, criteria required for the attainment of professional status, the leadership in the field of dental hygiene may also have to take into consideration the traditional interests/values of the dental profession itself. As this study has documented, these are significantly different from hygienists in certain respects.

Since values are by definition emotional preferences, and conflicts in relationships are frequently grounded in such differences, this possibility must be acknowledged in the case of dental hygienists and dentists. Apart from any rational, or objective considerations regarding the matter, it would be surprising for there to be total agreement between these groups on the need for, or merit in, the granting of professional status to hygienists. For example, the identified value differences between practising dentists and dental hygienists alone (Authority, Achievement, Economics, and Prestige) would, in themselves, contribute to very different perceptions on this issue. Confounding this matter further is the possibility that the identified female preference for Personal Development may be indicating that women are generally placing more importance than males on developing themselves as fully as possible, both in personal and career terms. The significance of this in terms of the professional aspirations of a female-dominated occupation such as Dental Hygiene should not be underestimated.

Justification for these observations is based on the fact that the average ages of the dentist-hygienist practitioners was 46.0 and 38.4 years respectively, making the majority of the practitioners graduates of the 1970s and 80s. During those decades, efforts to achieve professionalism in dental hygiene were largely embryonic, so it is reasonable to assume that the dentist-hygienist value differences identified in this study may be reflecting an hierarchical relationship which has been in existence for some time. However, during this time period society has changed a lot, not the least of which has been a major consciousness-raising directed towards attitudes on gender issues. To what extent these events have affected the attitudes of the hygienists in this study is impossible to determine, but if they have been an influence, one would expect that hygienists, particularly recent graduates, would be inclined to desire fewer restrictions on their personal, and occupational, aspirations. This would almost certainly find expression as a growing desire for professional status as well.

However, as previously noted, inferences about the results of the student samples must necessarily be tentative and speculative, as they cannot be assumed to reflect the general state of student values in Canadian schools of dentistry and dental hygiene. It would be an interesting research topic to investigate whether dental hygiene students in community college and university programmes are comparable in terms of work values, and whether the particular university programme in this sample is representative of the other two university programmes in Canada. The high response from the random national samples of graduates in dentistry and dental hygiene makes generalizations about their results less tentative, but not conclusive. Larger scale studies might address that issue.

Other broad areas for further research include the following questions:

1. Would longitudinal studies in work values, particularly for hygienists, reveal changes over time, and also identify the social, personal, and employment factors contributing to such changes?
2. What are the educational implications of these results? For example, what are the work values of Canadian educators in both dentistry and dental hygiene programmes, and to what extent are students influenced by the values of their educational mentors? For example, do students enter training with certain values and leave with different priorities? Do selection procedures favour those applicants whose work values coincide with their assessors? Finally, are student dentists and hygienists encouraged to conform to, or challenge, existing value structures? These, and other questions, are raised by the results of this study.

While several interpretations of these results have been advanced, from a counselling perspective, two conclusions seem clear. First, as suggested by Holland's theory, specific differences in the work values of dentists and hygienists were identified which may provide useful information for both counsellors and students engaged in career planning. Second, if it should be the case that the work values of the student sample of dental hygienists in this study are reflective of changes occurring in other dental hygiene programmes, it may be advisable for recent graduates in dental hygiene to have an open and frank discussion with their prospective employers during the hiring process about their mutual expectations. It is axiomatic in the counselling profession, for example, that unmet expectations are a common source of frustration and disappointment for individuals. This is particularly true in employment situations, where the need to be hired and the need to hire may obscure more important, long-term needs of both parties. The value differences identified in this study may serve an important function in that regard. Communication does not necessarily eliminate legitimate value differences, but it can go a long way towards preventing misunderstandings. Hopefully, the results of this study will help to further constructive communication on several levels between these important partners in dental services.

References

1. Alvi, S. A.: Work values and attitudes: A review of recent research and its implications. *Interchange* 1980-81, 11 (2): 67-79.
2. Parsons, E.: *Choosing a Vocation*. Boston: Houghton Mifflin, 1909.
3. Roe, A.: *The Psychology of Occupations*. New York: John Wiley & Sons, 1956.
4. Super, D. E.: *The Psychology of Careers*. New York: Harper & Row, 1957.
5. Holland, J. L.: *Making Vocational Choices: A Theory of Vocational Personalities and Work Environments*. Englewood Cliffs, NJ, 1973.
6. Krumboltz, J. D.: A social learning theory of career decision making. In A.M. Mitchell, G. B. Jones, and J. D. Krumboltz (Eds.), *Social Learning and Career Decision Making*. RI: Carroll Press, 1979.
7. Mitchell, L. K., and Krumboltz, J. D.: Research on human decision making: Implications for career decision making and counseling. In Brown, S. D. and Lent, R. W. (Eds.), *Handbook of Counseling Psychology*. New York: John Wiley & Sons, 1984.
8. Katz, M.: Interests and values: A comment. *Journal of Counseling Psychology* 1969, 16: 460-462.
9. Lofquist, L. H., and Dawis, R. V.: Values as second-order needs in the theory of work adjustment. *Journal of Vocational Behavior* 1978, 12: 12-19.
10. Lofquist, L. H., and Dawis, R. V.: *Adjustment to work*. New York: Appleton Century Crofts, 1969.
11. Pryor, R.: In search of a concept: Work values. *Vocational Guidance Quarterly* 1979, 27: 250-258.
12. Knsel, E. G., Super, D. E., and Kidd, J. M.: *Work Salience and Work Values: Their Dimensions, Assessment, and Significance*. Hertford, England: National Institute for Careers Education and Counselling, 1981.
13. Nevill, D. D., and Super, D. E.: *The Values Scale: Theory, Application, and Research*. Palo Alto, CA: Consulting Psychologists Press, 1986.

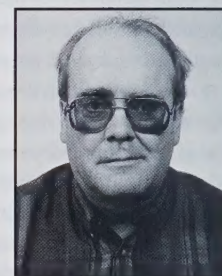
14. Vansickle, T. R., and Prediger, D. J.: *Occupational Attributes Differentiating Holland's Occupational Types, Job Families, and Occupations*. Iowa City, Iowa: American College Testing Program, 1991.
15. Keller, E. G., Bouchard, T. J., Arvey, R. D., Segal, N. L., and Dawis, R. V.: Work values: Genetic and environmental influences. *Journal of Applied Psychology* 1992, 77 (2): 79-88.
16. Borowko, M.: "The survey says...." *Probe* 1995, 29; 7.
17. Sakamura, J. S.: Values of dental hygiene practitioners, faculty, and seniors. *Educational Directions* 1981, 6(1): 20-25.
18. Fitzsimmons, G., Macnab, D., and Casserly, C.: *Technical Manual for the Life Roles Inventory: Values and Salience*. Edmonton, Psi Can, 1985.
19. Macnab, D. M., and Fitzsimmons, G. -W.: A multitrait-multimethod study of work-related needs, values, and preferences. *Journal of Vocational Behaviour* 1987, 30: 1-15.



Laura MacDonald is a dental hygiene educator and clinician who has a keen interest in community health promotion. She has been an assistant professor at the University of Manitoba School of Dental Hygiene for the past 10 years. Professional issues is one of her favorite topics of discussion; bringing dental hygiene care to the community and responding to the community's needs. Her interest in the work values that dental hygienists, in general, possess is an off shoot of this topic. Laura holds a Diploma in Dental Hygiene (U of M), a Bachelor of Science in Dentistry (Dental Hygiene) degree from the University of Toronto, and a Master of Education degree (U of M).

Dave Curtis' career journey started with his role as high-school teacher, but soon diverted towards career counselling, initially with the Red River Community College and Winnipeg Adult Education Centre, and eventually with the University of Manitoba's Counselling Service which he joined in 1976. During his years with the U of M, he

continued to research his particular area of interest—the role of career values in career decision-making and career satisfaction. In 1990 he was awarded his Ed.D from the University of Toronto (OISE), and, in 1994-5, co-authored the preceding study, comparing the career values of dental hygienists and dentists. In 1996 he took early retirement from the U of M to pursue a new path with CareerPlan, a private career consulting service based in Winnipeg.



HEALTH CARE REVOLUTION... (continued from page 35)

Being largely outside of the publicly-funded system has its advantages. But it has also meant that dental hygiene has not interacted nearly enough with the mainstream of health care professions outside of dentistry. The sad fact is that few people outside of dentistry know who dental hygienists are and what they do.

Inevitably, the revolution in the privately-funded system will go in the same direction as the publicly-funded system, hopefully learning from the miscues made in the public system. As the public system retrenches and de-lists services, the privately-funded system will be asked to pick up more and more. In order to control premium cost, hard choices will have to be made between covering services de-listed by governments and dropping existing coverage on services. Dental hygiene is not well-positioned in this equation. Too many insurers (and consumers) see oral hygiene as a non-essential luxury. We have to do much more to acquaint policy-makers and insurers with the long-term benefits to overall health of proper, routine, preventive oral hygiene.

Managed care, in various forms, is a growth area both in the public and private sectors. The growth of managed care is driven by payers who demand the lowest cost services and maximum practitioner-payer accountability and control. Some professions have decided to fight managed care. They may as productively fight against the setting of the sun and the rising of the moon. The better alternative is to learn how to live with managed care and prosper from it.

20. Haase, R. F and Ellis, M. V.: Multivariate analysis of variance. *Journal of Counseling Psychology* 1987, 34: 404-413.
21. Stamm, J. W.: Research and the dental hygienists: A lifeline to professionalism. *Proceedings of the Conference on Dental Hygiene Research* 1981: 5-9.

Acknowledgements

The authors wish to thank Llewellyn Armstrong, Consultant, Statistical Advisory Service, University of Manitoba, for her assistance with this publication. We are also indebted to the reviewers of the original manuscript for their valuable comments and recommendations. We hope that they will recognize their contributions to this article.

The new health care paradigm demands the most cost-effective care which, in part, demands "human resources substitution"—finding the lowest-cost profession that is able to deliver care safely and efficiently. Dental hygiene, if it can remove statutory, regulatory and practical restrictions to direct access, can fill this bill in the provision of oral hygiene care. More particularly, dental hygiene must sever its relationship of reliance on dentistry. Being dependent on dentistry is akin to being a rowboat on the Titanic. Dental hygiene must be able to swim on its own if it is to survive and prosper in the new health care environment.

As a firm we spend a lot of our time helping our clients understand and adapt to the new environment. The revolution isn't just in health care; it's also in industry, in government, in consulting, even in banks. What's more, in the health care sector, it's not just in dental hygiene. The revolution affects every health care profession.

Some react to the new environment by asking "Why me? Why now?" There's no time for such questions. Those who ignore, resist or passively try to ride out the changes will be lost in the shuffle. To quote J. Edward Denning "You do not have to change. Survival is not mandatory".

The fundamental question for dental hygiene is, quite simply: "Does the profession wish to cling to the status quo? Or, is the profession willing to break with the past and grab the enormous opportunities that the revolution in health care brings?"

CDHA Member Receives Health Service Award

Colleen Davy was presented with an Outstanding Health Service Award on October 18, 1996. The award, sponsored by the local Chamber of Commerce in Duncan, British Columbia, was given to Colleen for her outstanding service in the medical and dental category. The public were asked to nominate persons who had impressed them by providing excellent client care. Over 1200 nominations were received in 10 categories. Colleen's response to being selected for this award—"It feels good to represent the ever growing and changing profession of dental hygiene and in a positive way. I had not heard of such an award and am pleasantly surprised and grateful that my clients cared so much".

Recipients of this award were announced at an awards ceremony and were presented with a plaque and certificate.

Ms. Davy's career in the dental hygiene/dental field is extensive. In addition to her dental hygiene practice she has experience in office management, consulting, and reception work. She has practised as a dental assistant and was Chief Instructor of the Dental

Assisting Program at Okanagan College. Colleen holds a Diploma in Dental Assisting, a Diploma in Adult Education, and an Associate of Arts degree in Dental Hygiene.



Colleen Davy (bottom), displays the Outstanding Health Service Award presented to her by the Duncan, BC Chamber of Commerce.

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The participants in the January 30, 1997 meeting between the Executive Council members of CDHA and CDA. From left to right: Dr. Richard Sandilands, Vice-President, CDA; Dr. Barry Dolman, President, CDA; Ms. Sue McIntosh, President, CDHA; Ms. Donna Bowes, Vice-President, CDHA; Dr. Marnie Forgay, Past-President, CDHA; Ms. Judy Clarke, President-Elect, CDHA; Dr. Toby Gushe, President-Elect, CDA.

Hygienist Appointed to Regional Health Board in BC

Darlene Thomas, a practising dental hygienist and the first Chair of the College of Dental Hygienists of British Columbia Board, was recently appointed by the Minister of Health to the North Okanagan Regional Health Board (NORHB). The NORHB will govern the region's health care system under the revised "New Directions" program.

Darlene states "I was able to contribute to the first meeting of the NORHB on the basis of my experience as the Chair of the College and as a practising health care professional". Darlene's is the first appointment of a dental hygienist to a regional health board in BC.

In Errata

Probe—May/June 1996: The Family Violence Workshop held in Vancouver was a collaborative effort between two educational institutions: University of British Columbia Faculty of Dentistry and Vancouver Community College Dental Hygiene Program.

Probe—September/October 1996: The CDHA 7th Annual Professional Conference Report, Page 179, Photograph #7—Natasha Kravtsov, President of the Manitoba Dental Hygienists' Association was not present in this picture but Angie Yarnnton, President of the Saskatchewan Dental Hygienists' Association is present in the picture (third from the left).

Community Hospices: Their Role in Palliative Care

This feature article is the first of a series of three articles on hospice/palliative care which will be published in future issues of Probe. The remaining two features discuss hospice care case scenarios and the role of the dental hygienist in palliative care.

Introduction

Western society's attitude to death and dying is coming full circle. In the past, dying was seen as a natural part of the life cycle and people usually died in the home surrounded by their family. Little could be done for the dying except to make them comfortable as disease ran its course. However, as the medical world became increasingly focused on curing disease, sick patients began to be admitted to hospitals where aggressive curative actions could be taken. So patients who were dying were looked upon as a shameful admission of medicine's failure. Dying at home was no longer an option, while at the same time the dying person in hospital was not cared for appropriately. The concept of modern hospice care has been reborn as a reaction to this situation.

History

The origins of hospice care can be traced back through the Middle Ages to Roman times. In those days hospices served as both resting places for travellers and refuges for the sick and dying. By the 19th century in England, a number of hospices had been established which cared solely for the dying. The modern hospice was pioneered by Dame Cecily Saunders in the establishment of St. Christopher's Hospice in London in 1967. It has become the guiding influence in the field of hospice care around the world.

The Canadian hospice movement began in the late 1970s with the establishment, by Dr. Balfour Mount, of the Palliative Care Unit at the Royal Victoria Hospital in Montreal. Over succeeding years, a number of palliative care units and a free-standing hospice were developed, accompanied by a rapid growth in community-based programs of palliative care.

This mix was typical of major centres across Canada. In its 1994 directory, the Canadian Palliative Care Association lists almost 400 programs offering care and/or coordination of services. All provinces now have associations which assist local members to develop programs by providing educational opportunities and launching public awareness campaigns. For example, the Hospice Association of Ontario publishes several manuals, organizes Hospice Awareness Week and has embarked on various joint fundraising and public awareness campaigns with its members.

While in other countries the terms "hospice care" and "palliative care" have been used interchangeably, in Canada there has been some differentiation and confusion between the terms. This stems from a difference in meaning in French and English for the term "hospice". In French, hospice can mean "poorhouse", so the term "palliative care" (soins palliatifs) was deemed more acceptable. In English, both terms are used.

"The modern hospice is not a place, a building or an institution: it is a concept. It is a collection of ideas and attitudes informing an array of services based on a holistic philosophy of living and dying..."¹ It is a philosophy that provides not only physical care, but also emotional and spiritual support. It puts the patient at the centre, in control of their own life and care, and, equally, one that supports the family through the illness and after the death of their loved one.

Care is provided by an interdisciplinary team that is created to meet the special needs of each patient and family. It often comprises nurses, physicians, pharmacists, physio/occupational therapists, social workers, pastoral counsellors and volunteers. The concept of hospice care is that the care can be carried out in a person's home, in a free-standing hospice facility or in a hospital. While all these models exist in Canada, none of them is widespread. There is a great need for more hospice services to meet the current demand.



"Hospice Simcoe" volunteer working with client in Barrie, Ontario.

The Community-Based Hospice

"...An era of increased social action, the paucity of health care dollars for palliative care and apparent inertia on the part of a medical fraternity enchanted by technology, all led to a grassroots hospice explosion with many of the new teams made up solely of volunteers."² In Ontario, this explosion has been particularly evident. In 1989, the Hospice Association of Ontario was established with 24 members. In 1997, this has grown to 78. The role of these hospices has been to assist, without charge, in providing an improved quality of life for people with life-threatening illnesses and for their families. Community hospices train and supervise volunteers who support both the person who is ill and their family. Among the services provided by volunteers are:

- Personal care (assistance with personal hygiene, skin care, lifting, moving the patient)
- Emotional support (listening, encouraging, finding information, advocating)
- Respite care (providing time off for the family during the day or overnight)
- Support to children (child care, support programs for children with illnesses and children of palliative clients)
- Spiritual support (regardless of client's approach or faith)
- Information and referral (pain and symptom management, financial, legal, funeral planning)
- Bereavement support (individually and in groups)

Close cooperation between the hospice and other professional health care providers and community services is vital to ensure seamless care for the clients. The role of these community hospices is not to provide medical care or advice but rather to supplement the care given by professional health care providers. The hospice can assist families to make the necessary arrangements in order for their loved one to die at home. With the right kind of support, information and assistance families can manage the care of someone who is dying.

Hospice care can begin at any time. Increasingly, hospices are realizing that they are able to provide the best quality of care by becoming involved with clients at the time of diagnosis. Hospice volunteers and staff can support the patient and family with information, emotional support and in simple ways such as accompanying them to appointments throughout the treatment. Once the client has recovered and the crisis is over, the hospice will close the case, hopefully never to see the patient again. If, however, there is a recurrence of the disease, or if the disease becomes terminal, the established relationship is easily revived. It will be easier for a patient to call the hospice for assistance at the recurrence, or earlier in the terminal phase of the illness. By becoming involved early, hospices are better able to provide extra assistance to families in coordinating care.

While the bulk of the work is done by volunteers, funds are required to run the organization: to pay staff, to train and supervise the volunteers and to maintain an office space. Most hospice programs are strongly supported by their communities. In Ontario, in recent years, an average of only 24 percent of hospice revenues came from government sources, with the remainder coming from individual donations and fundraising events. The job of raising the money to support the hospice rests with volunteers, who raise thousands of dollars every year.

Hospice Volunteers

Volunteers are the backbone of community hospice services. In Ontario alone in 1995, over 7,800 women and men of all ages contributed 380,000 hours of service to 76 hospice programs. Many of these volunteers are client care volunteers, who provide care in both homes and institutions. A rigorous selection process is in place to choose these volunteers. It includes an in-depth interview, reference and police checks. It also includes a 30-hour training program which covers topics such as: communication skills, symptom management, nutrition, infection control, physical, psychological, spiritual and cultural aspects of death and dying, grief and bereavement, practical comfort measures and care for the caregiver. After training, volunteers are carefully matched with a patient and regularly supervised. Because of the intense nature of the work and the fact that hospice volunteers are working alone, various kinds of support are in place. These can include the "buddy" system, case conferences, additional educational experiences, team-building exercises. Hospice volunteers are a special breed, giving immense personal gifts to their patients, while speaking about the privilege they feel in sharing this time with patients and their families.

Conclusion

There remains a gap between what people who are dying need to live in comfort and dignity, and what they actually receive. "In an age of near miracles wrought by high-technology medicine, there is still the need for people to have relief from pain, help in bathing, eating and even breathing, and to enjoy simple, honest companionship when it is so desperately needed."³ This is the role of community hospices.

Resources

CANADIAN PALLIATIVE CARE ASSOCIATION

43 Bruyère Street, # 286, Ottawa, Ontario K1N 5C8

Telephone: 1-800-668-2785

Fax: (613) 241-3663

HOSPICE ASSOCIATION OF ONTARIO

40 Wynford Drive, #313, Toronto, Ontario M3C 1J5

Telephone: (416) 510-3880

Fax: (416) 510-3882

References

1. Amenta, M. and Bohnet, N.: *Nursing Care of the Terminally Ill*. Boston: Little, Brown and Company, 1986, Postlude.
2. Mount, Balfour M.: Volunteer Support Services, a Key Component of Palliative Care. *Journal of Palliative Care*, 1992, 1(8) 59-64.
3. Boate, K., Browne, J., Curtis, M.: *Developing a Home Hospice Program: A Start-Up Manual*. Toronto: Hospice Association of Ontario, 1995, Preface.

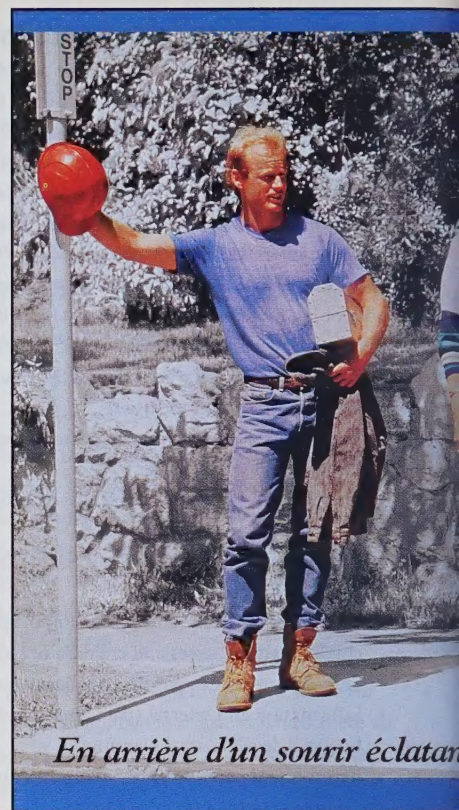


Jeanette Brown, Manager of Membership Services, Hospice Association of Ontario.

NATIONAL DENTAL HYGIENE CAMPAIGN

October 19-25

1997



En arrière d'un sourire éclatant

Behind Every Great Smile... A Dental Hygienist

1997 marks the last year that CDHA will be promoting this program for the NDHC. Members are encouraged to plan early and order materials now for the upcoming October campaign. An order form for the *Behind Every Great Smile...* poster series will be published in the next issue of *Probe*.

Over the next year, CDHA will be developing a new program to launch the *1998 National Dental Hygiene Campaign*.

1995—Toddlers

- First Dental Visit
- Mouth Care for Preschoolers

1995—Babies

- Fluorides
- Nursing Bottle Decay
- Teething
- Mouth Care for Infants

1994—School-Aged Children

- Mouth-Care for School-Aged Children
- Fissure Sealants

1993—Teens

- Mouth Care for Teens
- Gum Disease
- Smokeless Tobacco

1992—Seniors

- Mouth Care for Older Adults
- Gum Disease
- Denture Care
- Oral Cancer

Behind every great smile...

CDHA ACHD
The Canadian Dental Hygienists Association
l'Association Canadienne des Hygiénistes Dentaires

personal and professional dental care.

le soin dentaire personnel et professionnel

1996—Adults

- Gum Disease
- Mouth Care
- Oral Cancer

Behind every great smile...

CDHA ACHD
The Canadian Dental Hygienists Association
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Spring has sprung...? Well perhaps for you on the western coast of our fine country! However, here on the eastern seaboard, we will have to wait patiently for our spring. Before I go any further, I must apologize for giving you the wrong address for the Thomas Jefferson University "Jeffline" (Nov/Dec Issue). The correct address is <http://jeffline.tju.edu/>

Jeffline also provides a link to DHNet. Once you have logged in, click on the microscope (Research), then click on DHNet. This month, I would suggest you check out another section at the DHNet. My niece needed some dental information for a project she was doing, and at this address I discovered some graphics, images and diagrams which could be very helpful for those of you who give educational talks to schools, daycares or nursing homes, for example. Once you have accessed the DHNet click on the title "Consumer Information". A new screen will appear. Scroll to the bottom of the screen and under the heading "Other" click on "Links to Images and Diagrams". On these pages you will find several useful diagrams (for those of you with colour printers I envy you—the rest of us will have to borrow our daughter's coloured pencils). This is definitely a site to bookmark for the day you need material for that oral health talk with your son's grade three class... or any grade three class for that matter.

Our next site, The Dental Site, provides you with easy access to information under categories such as Patients, Dentists, Assistants, Hygienists, Technicians, and Dental Practices. Under Hygienists you will find Hygiene CE (what does this mean?), Schools, Dental Health Information, Directories, Products, Services and Career Opportunities, plus a section called "Just for Fun". Under the "Just for Fun" section, be sure to check out the toothbrush page where you will be treated to a "nifty" song to sing while brushing your

teeth. (By the way, if you can brush your teeth and sing a song, you're in the wrong profession.) Don't miss the split molar lamp either. Though it has its lighthearted moments, this website does have some great information. If you are thinking about a move for example, you may want check out the "Career Opportunities" section. The address is <http://www.dentalsite.com/>

My last address comes from the home page of the American Dental Hygienists' Association (ADHA). As we are all aware, our North American health care delivery system is rapidly changing. Some say managed care is the wave of the future. Will this become the wave of the future for dental hygiene? I think we would all agree this is one of the hot issues for our future. At this website take a look at "Opportunities for Dental Hygienists in Managed Care Organizations" then click on the "ADHA's position paper on managed care" icon at the bottom of the page. Here is a quote to tempt you: "ADHA will encourage the progress that states are making in recognizing that Dental Hygienists may appropriately provide preventive oral health services outside of the dental office, thus breaking down the barriers which have impeded access to oral health too long." Good luck and enjoy this address: <http://www.adha.org/hot.html>

Karen (Malloy) Wolf graduated from Dalhousie University's School of Dental Hygiene in 1984. She has practiced in general private practice for the past 12 years and continues to do so four days a week. She taught Radiology at the Nova Scotia Institute of Technology on a part-time basis for two years. She has delivered oral health presentations to local daycare centres, schools and Brownie groups. She is married with three children.



BOARD MEETING HIGHLIGHTS... (continued from page 40)

and Laura MacDonald for pilot testing in Winnipeg this winter. As Mickey explained in presenting the draft during Saturday morning's plenary, "Motivation to Move" is actually a series of workshops with broad appeal for dental hygienists nationwide. Participating hygienists will have an opportunity to use their practice standards in a very practical manner and participate in four "Toolshops" that will introduce strategies for both personal and professional change and growth. The workshop will be piloted in Winnipeg over the next two months and orientation training for those who are interested in facilitating the workshop series in their own regions will be available at the conference in June.

Among the Quality Practice Council's other scheduled activities are developing position statements on infection control, fluoride, sealants and selective polishing as well as finalizing revisions to the *Code of Ethics*. The revisions have now been distributed to the board for consideration and they'll be presented for approval in June. The council is also applying for a membership in the Office Sterilization and Asepsis Procedures Research Foundation (OSAP).

Special thanks went out to Diane Skene for all her background work and helpful input on evaluating conferences and to both Diane and Joan Degan for their efforts on the conference manual that will be completed after the conference in Ottawa in June.

After more than a week-end's worth of business planning with the other councils, the Executive Council spent Monday the 3rd and Tuesday the 4th putting together their own initiatives. They have two major plans for the coming months. The first is to establish a task force to develop a national communication strategy or blueprint for members to use in relating to the public. This strategy will require the support of a communications expert and is expected to be ready for implementation by 1998. The second initiative is a provincial association/CDHA workshop slated for June 1997 in Ottawa prior to the CDHA professional conference. Directors, provincial presidents, presidents elect and executive directors of provincial associations will all be invited to attend. Conference goals will be to confirm the understanding of the roles between the provinces and CDHA, enhance communication and promote symbiotic relationships between provincial and national groups.

Barbara Coyle is a communications consultant working in Ottawa.

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The Total Mouthwash



If you're looking for an effective way to help your patients fight halitosis, malodour or just plain bad breath, recommend new Colgate Total Mouthwash. By incorporating Colgate Total Mouthwash into a conscientiously applied dental regimen, your patients will benefit from its sustained antibacterial effect against malodours. Clinical studies show Colgate Total Mouthwash reduces the levels of odour-causing volatile sulphur compounds for up to 12 hours[†]. In addition, Colgate Total has a low alcohol formula, less than half of other leading mouthwashes.

It's Colgate Total Mouthwash's unique combination of 0.3% triclosan and the copolymer gantrez that provides the sustained antibacterial effect. In fact, it's the same combination used in Colgate Total dentifrice. In the dentifrice it provides a sustained antibacterial effect against calculus, plaque and gingivitis hours after brushing. So, if your patients have a need for long lasting fresher breath, recommend the 12-hour mouthwash. Recommend Colgate Total Mouthwash.

For a free sample, call 1-800-268-6757.



[†] To maximize Colgate Total Mouthwash's long lasting benefits, rinse after meals
 * Colgate Total, TM reg'd Colgate Palmolive-Canada Inc.

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YOUR DENTAL OFFICE
TO JOIN US IN GOING
THE EXTRA MILE
FOR DENTAL HEALTH.**



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Galapagos. Laughing in Luxembourg.**

Imagine one of your patients on a dream vacation of their choice!

The Colgate Miles of Smiles Call & Win Contest is going the extra mile to promote dental health and preventative care among Canadians during April Dental Health Month by giving them a chance to win a trip of a lifetime (for two) to anywhere in the world (maximum \$10,000 value).

The Ultimate Getaway - Just a Phone Call Away!

Simply:

- Dial 1-888 COLGATE.
- Correctly answer a simple dental health question based on Colgate's "5 Steps to a Winning Smile".
- Key in 2 UPC Code numbers of Colgate Total products; no purchase necessary.

And your patients are automatically entered into the contest!

Come Aboard and Fly With Us!

Thanks to your participation, last year's Dental Health Month was a resounding success. Together, we can make this year's even better. It's easy to get involved. Just look for your free dental health "Smile Kit" coming to your office shortly. It will include:

- Colgate Total toothpaste samples
- Colgate Total mouthwash samples
- Miles of Smiles Counter Display & Pamphlets
- Educational information regarding proper Oral Health care

Prepare for Take-off!

The Colgate Miles of Smiles Call & Win Contest begins in March and runs right through April Dental Health Month. Look for your free dental health "Smile Kit". It's a great way to promote dental health while creating excitement in your office. And, who knows, one of your patients could be grinning from here to there! That's something to smile about!

* TM Reg'd Colgate-Palmolive Canada Inc.



SELF-ASSESSMENT TEST

*Prepared by: Sadie Hearn, Dip.D.H., Dental Hygiene Program Coordinator,
St. Clair College of Applied Arts and Technology, Windsor, Ontario*

Oral Pathology

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1. A thirty-five year old black client presents for the assessment phase of his dental hygiene care. While examining the buccal mucosa you observe a generalized opalescence. This grey-white film is diffused equally throughout the area and when you stretch the mucosa the opalescence becomes less prominent. Suspicious of the appearance you take a gauze and gently try to remove the film. The film, however is an integral part of the buccal tissue and cannot be removed. Which anomaly are you most likely observing?

- a) melanin pigmentation
- b) leukoplakia
- c) lichen planus
- d) leukoedema
- e) linea alba

2. Your sixty-eight year old client arrives for her recall appointment. She has been under your dental hygiene care for several years and you have established an excellent rapport. Upon reviewing her medical history she discloses that she has had severe pain in her legs and has been diagnosed with varicose veins. She also states that she has been "feeling old" lately. During your oral inspection you notice red to purple enlarged areas on the ventral and lateral surfaces of the tongue. Which condition are you most likely observing?

- a) squamous cell carcinoma
- b) leukoedema
- c) lingual varicosities
- d) migratory glossitis
- e) melanoma

3. These examples of exostoses are found on the lingual aspect of the mandible in the area of the premolars. They are benign, bony and hard and require no treatment. Radiographically, they appear as radiopaque areas and are often bilateral. Which one of the following might you suspect?

- a) mandibular tori
- b) lingual mandibular bone concavity
- c) genial tubercles
- d) mandibular fossa
- e) mandibular varices

4. An eight year old girl comes for her appointment with her mother. Upon reviewing oral hygiene instructions with the child you observe that she is not brushing very

well and that there is generalized inflammation. She has been wearing orthodontic appliances for a year and a half and the tissue between the maxillary right lateral and cuspid areas is quite engorged and bleeds easily. Clinical examination reveals a sessile based lesion measuring 7mm by 5mm. Medical history update reveals that the child has had a wart on her hand within the past year. Suspicious of the area you request a biopsy and microscopic examination. When the report returns you read that the area contains stratified squamous epithelium covering a core of loose and edematous fibrous connective tissue. Numerous lymphocytes, plasma cells and neutrophils are also present. These findings thus indicate which of the following condition?

- a) verruca vulgaris
- b) pyogenic granuloma
- c) papilloma
- d) squamous cell carcinoma
- e) acute necrotizing ulcerative gingivitis

5. Upon review of the medical history of a twenty-one year old male you note that he has Stevens-Johnson syndrome. Intraoral inspection confirms your suspicion of oral ulcers on the lateral borders of the tongue and crusted bleeding lips. The characteristic bull's eye lesions on the skin that are associated with this syndrome suggests the following self-limited disease.

- a) Crohn's disease
- b) Behcet's syndrome
- c) erythema multiforme
- d) pemphigus vulgaris
- e) traumatic ulcers

6. Upon the initial examination of this twenty-five year old white male you observe oral candidiasis as well as hairy leukoplakia on the lateral borders of the tongue. His medical history reveals that he is HIV positive. His decision to seek dental consultation evolves around the fact that he has noticed a large red-purple raised area on his "gums" in the maxillary lateral incisor area. The biopsy report confirms your suspicion of which of the following neoplasms?

- a) ameloblastoma
- b) Kaposi's sarcoma
- c) odontoma
- d) papilloma
- e) ameloblastic fibroma

7. Your 2:15 p.m. emergency client presents with severe pain in the mandibular right area near the mental foramen. Review of his medical history reveals that he has recently been in a serious work related accident and had been struck in the jaw by a large metal plate. He has been placing aspirin on the area to relieve the pain. Radiographic examination shows no fracture to the bone. You suggest a referral for a biopsy and microscopic examination of the site. The returned report indicates that there has been damage to a peripheral nerve near the mental foramen. There are Schwann cells mixed with dense fibrous scar tissue at the site. The lesion is most likely which one of the following conditions?

- a) traumatic ulcer
- b) traumatic neuroma
- c) irritation fibroma
- d) aspirin burn
- e) sialolithiasis

8. You observe a large mucocoele-like lesion on the left side of the floor of the mouth during an oral inspection of a forty year old Caucasian female. The woman complains of a dry mouth and tells you that the "bulge" has increased and decreased in size over time and that the area is "tender". She also states that it rubs against her lower teeth. Radiographic findings reveal a small blockage of a salivary gland. You are most likely observing which of the following conditions?

- a) mandibular tori
- b) lingual varices
- c) frictional keratosis
- d) ranula
- e) traumatic cyst

9. This autoimmune disease affects the salivary and lacrimal glands resulting in the decrease in the amount of saliva and tears. Individuals with this condition may also have rheumatoid arthritis or systemic lupus erythematosus.

This condition often exhibits dry and cracked lips and generalized loss of filiform and fungiform papillae on the dorsum of the tongue. Which of the following diseases manifests the above conditions?

- a) pernicious anemia
- b) Behcet's syndrome
- c) benign mucous membrane pemphigoid
- d) pemphigus vulgaris
- e) Sjogren's syndrome

10. Your sixty-nine year old client reveals that because of her rheumatoid arthritis her physician has prescribed a regime of systemic corticosteroids. Upon clinical examination you observe a white curd-like material present on the mucosal surface of her hard and soft palate. The underlying mucosa is erythematous and the woman complains of a burning sensation. You suspect which one of the following conditions?

- a) pseudomembranous candidiasis
- b) aphthous ulcers
- c) herpetic lesions
- d) erythema multiforme
- e) lichen planus

References

1. Ibsen, Olga A.-C., and Phelan, J. A. *Oral Pathology for the Dental Hygienist*, W.B. Saunders Co., 1996.
2. Shafer, W., Hine, M., and Levy, B. A. *Textbook of Oral Pathology*, W. B. Saunders Co., 1983.

Sadie Hearn graduated from the University of Toronto, dental hygiene program in 1968. She is a full-time professor in the dental auxiliary programs at St. Clair College of Applied Arts and Technology, a position she has held for the past 28 years and she is coordinator of the dental hygiene program. She has been an active member of the profession on both the local and national levels and has been Secretary of the CDHA. Sadie continues to work in private practice and enjoys bringing "real world" experiences back to the classroom.

Answer Key: 1. d, 2. c, 3. a, 4. b, 5. c, 6. b, 7. b, 8. d, 9. c, 10. a

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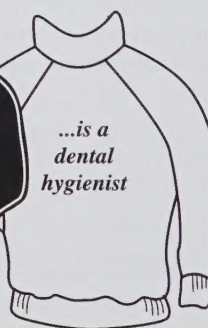


"Astro" collar
(forest green or white)

Golf-style collar
(navy blue)



front



back



ARTICLE:

Writing Research Papers

Author: ADHA Professional Development Staff

Journal: *Journal of Dental Hygiene*, Vol. 70, No. 1, Jan./Feb. 1996

Probe contributors who are inexperienced in the written presentation of technical papers may benefit from the step by step approach provided in this article. I found it both helpful and easy to understand.

Preparation for Writing the Text

STEP 1: Pick a topic that interests you, limit the scope and narrow the focus.

STEP 2: Go to the library to research the books, journals, articles and popular press items related to your topic. If you're not sure how to find what you are looking for, ask the reference librarian to show you how best to use their facilities to do your research.

STEP 3: Locate your sources, wherever possible using primary (the original source of the information), rather than secondary sources (someone else's report of that data). When photocopying articles remember to note publication name, volume number, author(s), date of publication. Review books too.

STEP 4: Read the reference sections of publications to find sources of other useful articles.

STEP 5: Organize your information using either a card index or a computer file. Decide on your headings and record bibliographic data and a synopsis of the information for each item you read.

Writing the Text

STEP 1: Determine the purpose of the paper. If it is to inform, write a "thesis statement", if to persuade, a "propositional statement". Examples of both are provided in the Appendices to the article.

STEP 2: Draft a point form outline of the paper.

STEP 3: Draft the text using the outline above as your guide. As you write the text, note citations in a separate "References" file. Observe the citation standards of your style manual. Examples of several style manuals are cited in the text.

STEP 4: Attract the reader's attention with the first paragraph, which should include your thesis statement as well as a preview of your main points and their importance.

STEP 5: Write your conclusion. Refer back to the first paragraph's thesis and main points, and, if appropriate, discuss the implications of the data presented.

STEP 6: Read and edit text for form and argument, then proofread again for spelling and grammar.

Writing the Reference List, Endnotes and/or Footnotes

STEP 1: Always refer to your style manual for accepted citation practice. Copy your completed "References" list to the end of your text.

STEP 2: Follow style manual guidance on whether to use endnotes or footnotes.

STEP 3: Endnotes should be merged before "References" in your document.

Writing the Cover Page and/or Abstract

STEP 1: Refer to your style manual for required style. Cover pages require, title, author's name and credentials and a text history.

STEP 2: Abstracts, which are brief summaries of the text, follow the cover page text.

Writing the Final Draft

STEPS 1-4: Proofread, revise and proofread again before submission.

Several Appendices follow the body of the article, providing examples of source indices, abstracts, thesis and propositional statements and draft outlines.

Editor's note: In the case of papers being considered for publication (including those for *Probe*), it is strongly recommended that the text be submitted in electronic format (on computer disk or by e-mail) as well as in hard copy. Because of modern publishing practices, submission of electronic copy considerably reduces editing time and publication overhead.

CONTINUING EDUCATION CALENDAR

60

MARCH

APRIL

- 21** **DENTAL IMPLANT
CERTIFICATION COURSE FOR
DENTAL HYGIENISTS, DENTISTS**
Dr. Mark A. Kochman
Toronto, ON.....(416) 233-9454

- 8** **PERIODONTAL SCREENING
AND RECORDING**
Dr. D. Price
Continuing Dental Education,
Dalhousie University
Halifax, NS.....(902) 494-1674

- 12** **MAGNIFICATION AND
SURGICAL TELESCOPES IN
DENTAL PRACTICE: HOW TO USE
THEM, HOW TO CHOOSE THEM**
Drs. L. Rucker and C. Beattie
and Ms. R. Lunn, RDH
Vancouver Community College
Continuing Education
Vancouver, BC.....(604) 874-9923

- 18, 19** **WHAT'S NEW IN DENTAL
PHARMACOLOGY? AND ORAL
PRODUCTS FOR HOME USE:
WHAT SHOULD I RECOMMEND?**
Professor Karen Baker
Kootenay Dental Hygiene Society
Rossland, BC.....(250) 352-6079

- 19** **A REVIEW OF COMMON
INTRAORAL MUCOSAL LESIONS**
Dr. J. Perry
Continuing Dental Education,
Dalhousie University
Halifax, NS.....(902) 494-1674

- 25** **ASSESSMENT AND
MAINTENANCE OF DENTAL
IMPLANTS: A CLINICAL COURSE**
Ms. D. Bapoo-Mohamed, RDH
D.M. Vassos Implant Learning Centre
Edmonton, AB.....(403) 488-1240

APRIL

MAY

- 25** **ESSENTIAL CONCEPTS
IN IMPLANT DENTISTRY**
Dr. K. Hebel
Continuing Dental Education,
Dalhousie University
Halifax, NS.....(902) 494-1674

- 10** **ORAL HEALTH PRODUCTS**
Professor K. Baker
Continuing Dental Education,
Dalhousie University
Halifax, NS.....(902) 494-1674

- 14** **ADVERSE DRUG REACTIONS
AND INTERACTIONS**
Dr. W. C. Foong
Continuing Dental Education,
Dalhousie University
Halifax, NS.....(902) 494-1674

- 23** **X-RAY X-CELLENCE**
Drs. B. Pass and T. Blackmore
Continuing Dental Education,
Dalhousie University
Halifax, NS.....(902) 494-1674

May 29-June 1

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Grants/Scholarships/Awards: Call for Applicants

For further information and/or an application form for the CDHA Dental Hygiene Diploma Student Scholarship, the CDHA Dental Hygiene Research Grant, or the CDHA Graduate Student Research Award, contact:

Canadian Dental Hygienists Association
CentrepoinTE Chambers, 96 CentrepoinTE Drive
Nepean (Ottawa), ON K2G 6B1

CDHA Dental Hygiene Diploma Student Scholarship

What is the CDHA Dental Hygiene Diploma Student Scholarship?

The CDHA Student Scholarship is awarded to an undergraduate dental hygiene student for their contributions to the advancement of dental hygiene.

The program consists of:

- One \$1,000.00 scholarship to be used toward dental hygiene education expenses.
- Air travel expenses to and from the CDHA Annual Professional Conference and four nights accommodation at the conference hotel. (Conference registration will be paid by the CDHA.)

Who is Eligible?

- Undergraduate dental hygiene students.
- Applicants must be CDHA student members.

How to Apply

- Applicants must submit, in writing, a description of their involvement with the Canadian Dental Hygienists Association.
- Applications must be accompanied by the endorsement of two CDHA members.

Criteria for Judging

- Demonstrated involvement in the Canadian Dental Hygienists Association, e.g.
 - Submitted material for publication in the CDHA *Journal* and/or *Explorer*.
- Demonstrated keen interest in national dental hygiene issues.
- Demonstrated qualities of leadership.
- Participation in National Dental Hygiene Campaign.
- Participation in national/international conferences such as table clinic presentations, poster sessions, presentations, etc.
- Applicants must describe how they have promoted oral health and the profession of dental hygiene in the community.

Note: The successful candidate must agree to submit for publication an article outlining his/her accomplishments/involvement.

Application Deadline

Applications are to be submitted to CDHA's Central Office by April 1, 1997.

CDHA Dental Hygiene Research Grant

Objective: To support Canadian dental hygienists engaged in research that enhances the dental hygiene profession's ability to promote health and well-being.

General Description: A grant of \$5,000 will be awarded annually to a Canadian dental hygienist involved in qualitative or quantitative research as a principal investigator or co-investigator. Preference will be given to research projects relevant to the discipline of dental hygiene and the goals of the CDHA.

Eligibility: Applicants for this grant must be academically qualified Canadian dental hygienists who are active or life CDHA members in good standing. Evidence of academic credentials at the Masters and/or Ph.D. level is required.

Applications: The deadline is **March 31, 1997**. Applications must be submitted on forms available from CDHA's Central Office.

Condition of Award: On completion of the research project, recipients of this grant agree to provide a written report for the *Probe* or reprints of journal articles to CDHA's Central Office.

CDHA Graduate Student Research Award

Objective: To promote the research training of Canadian dental hygienists in research oriented Masters or Doctoral programs

General Description: An award of \$5,000 will be given annually to a highly qualified candidate enrolled as a graduate student in a Masters or Doctoral program.

Eligibility: Applicants for this award must be Canadian dental hygienists who are active, associate, student or life CDHA members, in good standing, who may be studying full or part time. Applicants must present evidence of having been accepted by a recognized academic institution.

Applications: The deadline is **April 1, 1997**. Applications must be submitted on forms available from CDHA's Central Office.

Duration: This award is made for one academic year for full-time students or the equivalent for part-time students. The award may be renewable for one additional academic year or its equivalent on receipt of a satisfactory progress report. The progress report must detail work to date and include any pre-prints or reprints arising from the work. Any request for renewal of this award should be accompanied by a letter from the research supervisor and one other referee.

Condition of Support: On completion of studies, recipients of this award agree to provide a bound copy of the thesis or project to CDHA's Central Office.

Funding for Dental Hygiene Research

CDHA Endowment Fund/Dentistry Canada Fund Grants

Individuals who are Canadian citizens or possess landed immigrant status, whose vocation is primarily concerned with any aspect of dental hygiene, are eligible to apply for grants through the CDHA Endowment Fund. Non-profit organizations or any faculty or school whose primary activity is related to any aspect of dental hygiene are also eligible to apply.

Applications must be directed towards upcoming projects since retroactive grants will not be considered. Furthermore, grants are awarded for the specific programs or projects described in the application and any change in the use will necessitate a repayment.

Grant recipients are obliged to give credit to CDHA and DCF in any promotional matter relating to the projects or programs and CDHA/DCF logos can be made available to successful applicants on request.

Applications may be submitted at any time of the year. The DCF Board of Directors and the CDHA Endowment Fund Committee meet twice a year, in mid-fall and in mid-spring, to review applications. No application can be approved without DCF Board/CDHA Committee review. The number and scope of awards is dependent on the funds available.

To request an application contact CDHA at 1-800-267-5235. All applicants must use the official application form. Incomplete applications will not be reviewed. Faxed applications will not be accepted. All applicants will be notified of the date their proposal will be reviewed by the DCF Board/CDHA Committee.



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CDHA/Colgate Community Health Grant

Objective: To support Canadian dental hygienists engaged in community health projects that promote oral health and wellness.

General Description: A grant of \$3,000 will be awarded annually to a Canadian dental hygienist who presents a new community health initiative that is not associated with any other dental health delivery program. Preference will be given to community projects that are relevant to the discipline of dental hygiene and the mission and objectives of the CDHA. National Dental Hygiene Campaign projects/initiatives are not acceptable for this grant.

Eligibility: Grant applicants must be academically qualified Canadian dental hygienists who are active or CDHA life members in good standing.

Application Deadline: The deadline for applications is **April 30, 1997**.

Duration: The recipient of the grant will be notified by May 31, 1997 and will have one year to implement the initiative. At the end of the first year of the initiative, a written report is to be submitted to the CDHA. The CDHA reserves the right of first to publish all works generated as a result of the initiative. A successful applicant may re-apply for a second consecutive year. Second applications will be considered on the same basis as any first applications. No more than two awards will be offered for any one initiative.

For more information or to receive an Application Form contact:

Canadian Dental Hygienists Association
96 Centrepoin Drive
Nepean, ON K2G 6B1
Phone: (613) 224-5515 Fax: (613) 224-7283

Services Available at the 8th Annual Conference

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Do you or your association have something to promote/sell at the Conference? 10 six-foot long tables are available at the "Marketplace" on a first come, first served basis. Contact:

Karen Dawson (Marketplace), CDHA Conference
96 Centrepoin Drive
Nepean, Ontario K2G 6B1

Phone: 1-800-267-5235
Fax: (613) 224-7283

Child Care Available

Is your family coming with you to the Conference? Limited private child care services are available for a fee. For further information contact CDHA Central Office at 1-800-267-5235.



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<i>The Periodontium</i> 9 a.m. to 4:30 p.m. Marilyn Goulding	ReginaApril 12	<i>Ultrasonics Revisited</i> 9 a.m. to 12:00 noon Jenny Thomas	WinnipegApril 12 OshawaApril 26 Sault Ste. MarieJune 5 LondonJune 7
<i>Clinical Application of Ultrasonics</i> 9 a.m. to 12:00 noon Nancy Keselyak	KelownaApril 5 VancouverApril 19 Red DeerApril 26 KamloopsMay 3	<i>Ultrasonics (French Session)</i> 9 a.m. to 12:00 noon Sylvie Martel	WinnipegApril 12 Quebec CityApril 5 Montreal AreaApril 19 SherbrookeMay 10

To register and for more information, contact Sara Foster at 1-800-263-1437

63

Duraflor®

Fluoride-containing preparation with deep penetrating action for caries prophylaxis and treatment of sensitive necks of teeth.

1 mL of fluoride varnish contains: 50 mg of sodium fluoride, equivalent to 22.6 fluoride ion.

Properties

Duraflor is a clinically tested fluoride containing varnish, combining a marked caries prophylactic effect with a particularly time-saving technique of application. In addition, it displays a strong desensitizing effect when applied to dental surfaces. Duraflor is remarkably water-tolerant and therefore covers even moist teeth with a well-adhering film of varnish which hardens in saliva, and, during the following hours, allows deep and long-lasting fluoridation of teeth.

Indications

1. Treatment of hypersensitive necks of teeth.
2. General caries prophylaxis in children and adults by painting

the whole dentition.

3. Caries prophylaxis at certain weak points, such as newly erupted teeth, sites of early carious decalcification, discoloured fissures and braced teeth.
4. Prophylaxis of secondary marginal caries by painting the preparation borders after insertion of fillings, as well as inlays, crowns and bridges.
5. Prophylaxis of residual dentition after insertion of dental prosthesis.
6. Desensitization and re-enrichment of the dental hard tissues with fluoride after grinding of the whole dentition or individual teeth.
7. Must be applied by a qualified dental professional.

Mode of application

1. Perform complete prophylaxis of teeth.
2. Place 0.5 mL of Duraflor (three to five drops) into a dappen dish.
3. Isolate one or two quadrants using cotton rolls.

4. Dry isolated quadrants.
5. Evenly apply a thin film of Duraflor using a small brush or cotton swab.
6. Use dental floss to reach interproximal surfaces.
7. Repeat for other quadrants starting with (3)
8. Varnish should be left on teeth for four hours and then removed by a thorough brushing. Instruments, dappen glass, clothing, etc., in contact with Duraflor may be cleaned with alcohol.

Note

Duraflor forms a light yellowish film on the teeth which has the advantage of assuring a uniform painting. Instruct your patient to eat only soft foods and soups for four hours following treatment (two hours in desensitization treatments). The yellowish film is removed upon a thorough brushing.

Dosage

Adults: Apply 1 to 1.5 mL of varnish once every three to six months.

Children: Apply 0.3 to 1.0 mL of

varnish once every three to six months.*

In caries prophylaxis, the application of Duraflor should be repeated at six month intervals. For the treatment of hypersensitive necks of teeth, two applications at several days' interval are sufficient in most cases.

The fluoride content of Duraflor is dosed in such a way that neither acute nor chronic side effects are to be expected if applied according to instructions.

Fluoride Varnish for Desensitization

Please observe when treating hypersensitive necks of teeth.

1. Prophylaxis with straight pumice.
2. Paint Duraflor on sensitive parts with adaptic brush or cotton swab.
3. The patient may leave immediately following application of Duraflor, which hardens on contact with saliva.
4. Instruct patient to eat only soft foods and soups for two hours after treatment.
5. Clean instrument with alcohol.

1. Anderson, Maxwell H., "Changing paradigms in caries management", *Current Opinion in Dentistry* (1992, 2:157-162).

* Alternatively, three application at two-day intervals in one week, once a year has also proven effective.²

² Peterson, L.G., et al. "Caries-inhibiting effects of different modes of Duraphat varnish reapplication: a 3-year radiographic study," *Caries Res* (1991, 25:70-73).

* Duraflor is a registered trademark of Pharmascience Inc.

National Dental Hygiene Campaign Report

The 1996 National Dental Hygiene Campaign (NDHC) was the final year of the poster series "Behind Every Great Smile..." The poster series has made a wonderful resource kit that is used by dental hygienists across the country. As the posters are not dated, they can continue to be used year round as oral health promotion material. Dawn Mueller, Dip.D.H., Coordinator of the NDHC congratulates each provincial coordinator that participated in the National Dental Hygiene Campaign over the past five years, for their contributions to the success of each year's Campaign.

Following are highlights of National Dental Hygiene Campaign Reports submitted by participating provincial associations/component societies.

Alberta Dental Hygienists Association

Provincial Chair: Josephine Juchli, BEd, Dip.D.H.

- A 1/4 page advertisement entitled "May We Introduce Ourselves?" in the October 19, 1996 issue of the *St. Albert Gazette Press Ltd.*
- Conjoint sponsorship of an exhibit with the Schizophrenia Society of Alberta at the Edmonton Women's Show, October 26-27, 1996.
- A public exhibit in Calgary which addressed Tobacco Product Use.
- Cafeteria displays to promote the dental hygienist's role in long term care and acute care facilities in the Aspen Regional Health Authority.
- "Behind Every Great Smile" bus signs on public transit in the cities of St. Albert, Sherwood Park, Red Deer, Lethbridge, Medicine Hat, and Grande Prairie.

Saskatchewan Dental Hygienists Association

Provincial Chairs: Arleigh Pollock, Dip.D.H. and Diane Looker, Dip.D.H.

- An advertisement about the dental hygiene profession was placed in two newspapers the week of October 20-26th. Ad information included: the first Canadian dental hygienist hailed from Regina, all dental hygienists are formally educated and licensed health professionals, and the scope of dental hygiene practice.
- Dental hygienists in the Yorkton area continued their annual tradition of volunteering their time at a local nursing home, where they provided oral screening exams, oral hygiene instruction and denture care.

Manitoba Dental Hygienists Association

Provincial Chair: Patricia Warden, Dip.D.H.

- Announcement of NDHC slogan and dates of campaign on billboards throughout Winnipeg.

- NDHC week was identified on all Manitoba Hydro customer statements during the month of October.
- Displays developed by City of Winnipeg dental hygienists, MDHA, and students at the University of Manitoba School of Dental Hygiene were shown at three shopping malls on different dates. Displays included take-home information on oral care.
- Local radio station offered prizes during NDHC week and announcers delivered (pre-prepared) messages concerning oral health.
- Donations and support for NDHC were provided by Trident, Extra Gum, Shoppers Drug Mart, U of M School of Dental Hygiene, and CJOB Radio.

Ottawa Dental Hygienists Component Society

Component Chair: Sylvie Ranger-Fernandes, Dip.D.H.

- Free oral health assessments made available by 13 dental hygienists in nine locations around Ottawa.
- A CJOH *Midday Newsline* dental hygiene interview by Ron Wilson.
- Weather reports and interviews from dental hygiene chairs by Bob Cowan (CHRO) and Ian Black (CBC).
- 14 gift baskets for radio and in-office contest winners filled with over \$1,100 worth of oral hygiene supplies donated by: Teledyne Waterpik, Oral-B, Block Drug, Germiphene, Bolton Dental, Bausch & Lomb, Hoechst-Roussel, Butler, Pro-Dentec, Wrigley Canada, and Colgate.
- A cellular phone was donated by Kool FM radio.
- NDHC announcements posted by McDonalds' head office, at all 22 local restaurants.
- Public service announcements were published in various large and small newspapers, announced by local radio stations and hand delivered to local businesses by all participating dental hygienists and their dental teams.

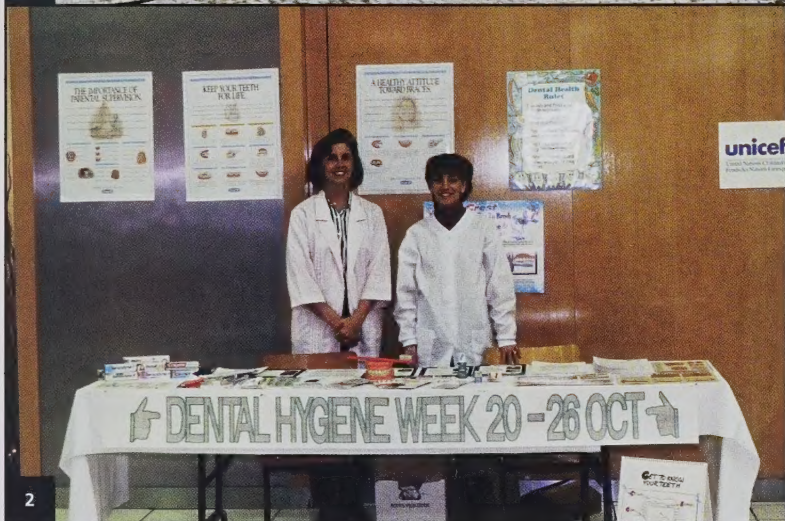
New Brunswick Dental Hygienists Association

Provincial Chair: Janet Irvine, Dip.D.H.

FREDERICTON: A local cable channel and local radio stations ran announcements of the NDHC throughout week of October 20th, a movie theatre had an illuminated sign announcing the NDHC, local newspapers ran a series of articles through the month of October, and a shopping mall display was presented by dental hygienists on October 19th.

MONCTON: A dental hygienist, together with "Clara the Clown" visited a local hospital pediatric ward, a shopping mall display was presented and included oral hygiene prizes, and radio stations ran public service announcements the week of October 20th.

National Dental Hygiene Campaign Report



1. As members of the Fredericton Dental Hygiene Component Society of New Brunswick, Shirleyann Mowforth (holding ladder) and Jackie Vanthournout (on ladder) helped to share information from the 1996 National Dental Hygiene Campaign with their community.
2. Jennifer Patterson (right) and Jackie Vanthournout (left), of the Fredericton Dental Hygiene Component Society, were among the many hygienists in New Brunswick who helped promote the NDHC during October, 1996.

SAINT JOHN: A local newspaper as well as radio stations in the area ran announcements about the NDHC during the week of October 20th, dental hygienists visited the "Boys and Girls Club", and practitioners distributed "CDHA Fact Sheets" and information on Oral Cancer Self Exams to their clients.

MIRAMICHI: Local radio stations did NDHC "spots" throughout the week, dental hygienists visited day care centres and Brownie groups, and individual practitioners distributed fact sheets in their practices.

NORTH SHORE: Promotion of NDHC by each dental hygienist providing clients with "CDHA Fact Sheets".

UPPER SAINT JOHN RIVER VALLEY: The local newspaper promoted the NDHC via an article, cable T.V. stations featured public service announcements throughout the week, and individual dental hygienists promoted the campaign to clients in their practices.

Prince Edward Island Dental Hygienists Association

Provincial Chair: Monica Robinson, Dip.D.H.

- Displayed large sign promoting the NDHC in a highly visible location in downtown Charlottetown.
- Individual dental hygienists promoted oral hygiene care by way of distributing pamphlets and donations of Butler products in their practices and to a woman's shelter.
- PEIDHA invited local businesses in Charlottetown to place NDHC logos on their signs.

Nova Scotia Dental Hygienists Association

Provincial Chair: Maribel T. Reyes, Dip.D.H.

- Development of two basic oral hygiene related resource kits, an Educational Resource Kit Classroom Display and a Educational Resource Kit Mall Display for use by dental hygienists to promote oral hygiene care and the profession.
- Placement of a public service announcement on a local FM radio station.

Newfoundland Dental Hygienists Association

Provincial Chair: Jeanie Bavis, Dip.D.H.

- Obtained local and national corporate support (Dentsply, Dental Supplies Ltd., Patterson Canada Inc., Oral B, and Midland Walwyn) for placing a NDHC advertisement in the local newspaper; circulation of 65,000 throughout Newfoundland and Labrador.



How to advance tooth by a power

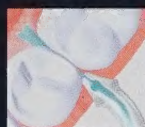
and gum care
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**ULTRA and INTERCLEAN™
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Clinically proven to provide unsurpassed cleaning action, the Braun Oral-B® ULTRA Plaque Remover gently



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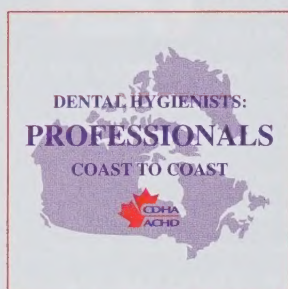


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Refer to the Insert for Full Details

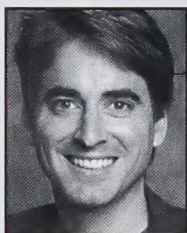
PRE- AND POST- CONFERENCE SESSIONS

**Friday, June 27 (9:00 a.m.–12:00 noon) or
Sunday, June 29 (2:00 p.m.–5:00 p.m.)**

Lori Maughan, R.N. Ottawa, ON Cardio-Pulmonary Resuscitation (Recertification)

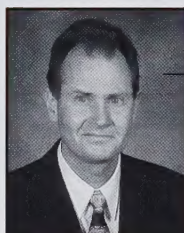
CONFERENCE SESSIONS

Friday, June 27 (p.m.)



Mike Carbone,
Toronto, ON

"Let's Talk" Night-time talk show format with guest speakers discussing the latest trends and changes in the profession of dental hygiene



Alex W. Penner, B.Sc., D.M.D.,
Abbotsford, BC

"Profile—Water Contamination in Dental Units"

Sponsored by Oasis Dental Group Inc.

Saturday, June 28 (all-day sessions)



Marg Archibald, B.A.,
Monday Communications Group, Calgary, AB

"Effective Communication and Marketing for Health Care Professionals"

Sponsored by the College of Dental Hygienists of Ontario



Marilyn Goulding, Dip.D.H., B.Sc.,
Fort Erie, ON

"The Periodontium: Its Treatment and Repair"

Sponsored by Dentsply Canada



Saturday, June 28 (a.m.)



Nancy Keselyak, RDH, MA,
Port Coquitlam, BC

"Clinical Application of Ultrasonics"
(Attendance Limited to 40 Registrants)

Sponsored by Dentsply Canada

Commercial Exhibits

Please refer to the insert in this issue of *Probe* for an alphabetical listing of our Commercial Exhibit Display.

Saturday, June 28 (p.m.)



Sylvie Martel, h.d.,
Ottawa, ON

"Ultrasonics Revisited" (French Session)
(Hands-on Workshop, Attendance Limited to 40 Registrants)

Sponsored by Dentsply Canada

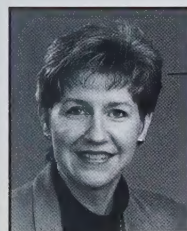


Laura Dempster, B.Sc.D.(D.H.), M.Sc.,
Toronto, ON

"Dental Anxiety—The Practitioner and the Client", and

"Developing Critical Appraisal Skills:
Knowing What to Read and How to Read It"

Sunday, June 29 (a.m.)



Nancy Keselyak, RDH, MA,
Port Coquitlam, BC

"Clinical Application of Ultrasonics"
Repeat of Saturday's Session
(Attendance Limited to 40 Registrants)

Sponsored by Dentsply Canada



Marg Archibald, B.A.,
Monday Communications Group, Calgary, AB

"Effective Communication and Marketing
for Health Care Professionals" Continuation
of Saturday's Session

**Sponsored by the College of Dental
Hygienists of Ontario**



Carolyn Kennelly,
R.N., B.Sc.N., C.I.C.,
Ottawa, ON

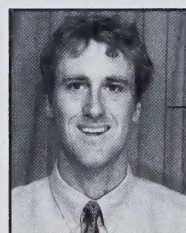
"Bloodborne
Pathogens"

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Dale Scanlan,
Dip. D.H.,
Nepean, ON

"All Clefts
Great and Small"



Jack Newton,
D.D.S.,
Ottawa, ON

"Oral Cancer"

Free Papers Presentations

Laura Dempster,
B.Sc.D.(D.H.), M.Sc.
Toronto, ON

"Using Critical Appraisal Skills
to Decipher Scientific Articles"
(Hands-on Workshop,
Unlimited Attendance)

"Community Connections" coordinated by
Donna Bowes, Dip.D.H., Dip. Gerontology

This session is targeted at those dental hygienists with a particular interest in alternative practice settings, community health issues and delivery methods. It is an opportunity to learn about new initiatives under way in other parts of the country and to share information and ideas with colleagues.

Presenters and Topics to be Announced.

Edmonton, Canada University of Alberta Dental Hygiene

The University of Alberta, Faculty of Medicine and Oral Health Sciences, invites applications for a full-time, tenure-track assistant or associate professor position in Dental Hygiene. Responsibilities of the position will include didactic and clinical teaching and other related duties in the Dental Hygiene program. The successful candidate will have a proven record of research achievement and be expected to carry out an independent research program. The appointment will be in the Department of Oral Health Sciences and opportunities exist for collaborative interactions with multidisciplinary research groups. Applicants must hold a Dental Hygiene diploma and/or degree, and a Masters degree in Dental Hygiene or related field.

The University of Alberta is a research-intensive, full-service university with an enrollment in excess of 29,000 students. The Faculty of Medicine and Oral Health Sciences is a multidisciplinary faculty with approximately 370 full-time faculty members. Research endeavours are going forward in numerous areas of basic, as well as clinical and applied research in the Oral Health Sciences and in Medicine. We are searching for a faculty member who will compliment our existing strengths in scholarly teaching and research and our broadened mission within the faculty and the university.

Edmonton, Alberta is a modern dynamic metropolis with a population of approximately 700,000 that boasts world class cultural and artistic opportunities as well as recreational and sporting activities.

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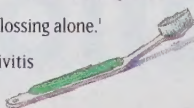


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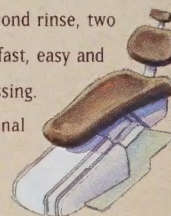
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* "Listerine helps reduce gingivitis (minor inflammation of the gums caused by plaque above the gumline) when used in a conscientiously applied program of oral hygiene and dental care." CANADIAN DENTAL ASSOCIATION †

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‡ Gingivitis was evaluated using the Modified Gingival Index.

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1. Overholser CD et al. Comparative effects of two chemotherapeutic mouthrinses on the development of supragingival dental plaque and gingivitis. J Clin Periodontol 1990;17:575-579.

2. Data on file, 1995.

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May/June 1997 vol. 31, no. 3

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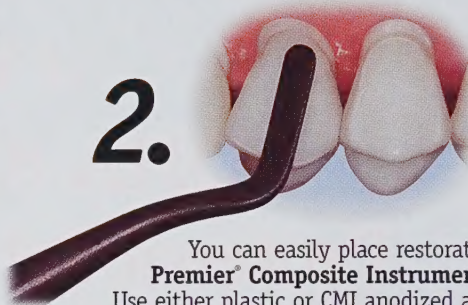


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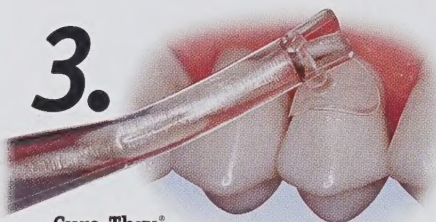
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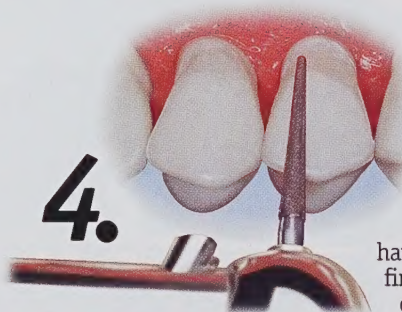
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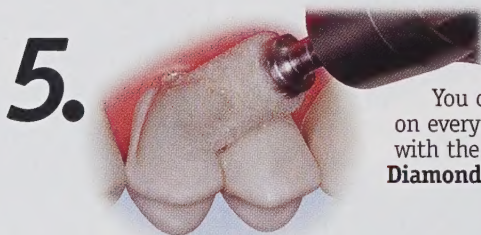
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Walking a Tightrope—Finding the Balance

We live in tough economic times...

Money is the driving force...

The human factor doesn't count anymore...

There is no more loyalty...

These sad but true statements are a sign of the times and an expression of where we stand morally and ethically.

How do we survive today's environment so that we don't lose our sanity, make ourselves sick, or lose our jobs, and yet ensure that we can face ourselves in the mirror every morning? While there have always been the good dental practices and those that we'd prefer to avoid, these days, because positions are scarce, hygienists are finding themselves more frequently in "bad or undesirable practices".

One of the primary concerns of any working person is the relationship they have with their co-workers and employer. Various studies have been done which highlight the differences between a "good" and a "bad" employer. A good employer treats you with respect, listens to you, gives recognition when recognition is due, provides you with the proper equipment to do your work—ultimately, one whose personality and philosophy mesh with your own. Though a good employer pays you what you are worth, studies have shown that money is not the most important factor in determining job satisfaction. Recognition, job flexibility and respect rank higher than money as job satisfaction motivators. However, when discussing the other indicators, there is a consistent underlying assumption that the individual is being paid a fair wage.

The characteristics of a "poor employer" are the complete opposite of those for a good employer, with the added (and very problematic) characteristic of immoral and unethical behaviour. While the discussion of morality or ethical behaviour is not new, more people seem to be talking about it. Perhaps this is because the tough economy is refining people's characters in ways we might not have witnessed in gentler times. A typical example is the number of stories one hears about long-term, loyal dental hygienists being terminated in favour of less costly, younger hygienists.

Being unhappy at work is extremely unhealthy. The Canadian Mental Health Association estimates that between \$10–\$12 billion is lost due to absenteeism, alcoholism and the treatment of emotional problems as a result of poor work situations. Recognizing work-related stress is not as easy as it sounds. Sometimes we can get so caught up in the emotional battles we fight daily that we lose sight of the price of the battle. Fatigue, insomnia, high blood pressure, headaches, ulcers, heartburn, inability to concentrate or relax, changes in appetite, feelings of overload, inability to leave job

problems at work, and depression, are just a few of the symptoms of stress identified by the Canadian Mental Health Association.

People also react differently to stress. They may talk to others to air their grievances. While talk may be helpful, it can also increase anxiety and stress unless steps are taken to change the situation. Some people work harder or longer, others withdraw physically by quitting, or reducing the time they spend at work. They may withdraw mentally as well by engaging their minds elsewhere even when they are at work. Others participate in hobbies or non-work-related activities that help put things in perspective. Most, but not everyone, will look for ways to change the situation.

So what are some constructive ways to cope with a bad employment situation?

1. Assess your situation. Define priorities in your entire life not just your work life. Ask yourself, are you working to live or are you living to work?
2. Decide what the problem is at work. Is it a colleague that is making life difficult, or is it your employer and their behaviour that is the problem? You may deal differently with the situation if the problem is your employer rather than a colleague.
3. Be honest with your employer. Explain your concerns and express how you feel. Try to work out a solution you can both agree upon.
4. You may want to seek outside help for counselling—especially if you have been using your co-workers as counsellors. Community health agencies, family service agencies, the Canadian Mental Health Association, and hospitals can assist in providing counselling help. Talk to your family doctor about your work situation as well.
5. Eat healthy foods, go to sleep at a sensible time, cut down on alcohol, tobacco and drugs, and don't over-exercise.
6. Document incidents that cause you concern. Keep an accurate, detailed, unemotional, dated log of events.

Walking a Tightrope—Finding the Balance (continued on page 83)

Diane Allen is President of Foresight Healthcare. She has had over ten years of office experience as a dental hygienist as well as a wide range of management experience in small and large practice settings. She is the editor of three national health care newsletters. She has provided consulting services to dental offices, community health centres, associations, colleges, and hospitals; supplying expertise in planning, effectiveness, utilization, quality and practice management. Ms. Allen holds a B.Sc.D.(D.H.) degree and a M.H.Sc. degree, both from University of Toronto. She can be reached through her business address at Swansea Postal Outlet, P.O. Box 88501, Toronto, ON M6S 3N0, or by phone at (416) 769-6344, or fax at (416) 769-6624.



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Metamorphic Completions: The Crossroads

It is with mixed emotions that I approach the end of my term as President. To get through a full week without the fax or phone bringing a new mini-crisis has a certain appeal. On the other hand, I will miss the opportunities for personal growth that come from serving so many highly-motivated and wonderful dental hygienists. It has been a year to remember, a once in a life time honour for which I shall always be grateful.

As I have reflected back on what I have learned these last three years sitting on your Executive Council, I have tried to separate the wheat from the chaff. Although my list of experiences is endless, one issue stands out above all the others. That issue is the manner in which we achieve our professional metamorphosis. I believe that while the transition itself is inevitable, the manner in which we get there still remains to be determined. Will it be collegially, or with rancour? The entire oral health care team is in transition. Some see the writing on the wall and agree with what it says. Others resist change and draw battle lines. Which group will prevail, who will decide whether collegiality or confrontation provide the crucible for change?

What are Canadian dental hygienists thinking about all of this? Some of our members believe that our concerns about self-governance and scope of practice are being resisted because of the presence of ego and gender issues within the profession and because dentists fear loss of income. Others, myself included, find such criticisms harsh and judgemental, though there will always be a few individual dentists for whom the shoe fits.

Structural change is never easy, particularly when it reduces the bulge in the pocketbook. The 1990s have seen a confluence of factors which have strained the self-confidence of dentists, and, as a result, their working relationships with hygienists. These include massive government cutbacks in health care; private insurers and managed care operators attempting to control the extent and cost of services; clients demanding more accountability and freedom of choice; hygienists insisting upon more direct access to dental hygiene services for clients who cannot afford, or do not wish to use the Gatekeeper; and, last but not least, the significant success of the oral health team in promoting prevention, with a resulting decline in restorative needs. All of these changes have contributed to the strain and uncertainty that prevails as the roles of the oral health team professionals are redefined.

In an earlier President's Message, I described the anxiety and frustration that is developing amongst many dentists towards those whose roles no longer follow traditional lines. I also wrote of other dentists who see the bigger picture and wish to open a fair and equal dialogue on the parameters of our professional evolution. In that Message, I extended the hand of CDHA to the

Canadian Dental Association and invited dialogue as to how we can work together to bridge the gap that divides us. I spoke of the responsibilities of both CDHA and CDA to find a way to serve the public interest in a manner that recognizes the scientific, educational and economic realities of the 1990's.

I am pleased to report that our extended hand was grasped firmly by the Executive of CDA at a recent joint meeting of our Executives in Ottawa this January. The leadership within CDA has committed to re-establishing open dialogue between our organizations—something that has lapsed over the last few years. Both sides agreed to try harder to work together to find solutions, and where our interests diverged, we agreed to differ without animosity or disrespect.

So progress is being made. The metamorphosis is underway. I am optimistic. We are re-defining our traditional roles. We are beginning to provide access to those who previously had no access. We are breaking down barriers that prevent a broad spectrum of Canadians from receiving basic preventative oral health care, provided directly by dental hygienists. That's right—not through the Gatekeeper, but dental hygiene services, provided by dental hygienists, within the scope of dental hygiene practice.

We are learning as we go. We are gradually shedding the attitude of dependence and reliance that has historically defined the relationships between dentists and dental hygienists within the private sector. We are learning that our commitment to the ideals of our profession must be matched by a commitment to advocacy with clients, with governments, and most of all with dentists. We are standing on our own two feet. And it feels good.

I am proud to have had this extraordinary opportunity to serve CDHA. I wish my successor Judy Clarke all the joys, challenges and interesting times with which I have been blessed. And I thank all of you who have touched my life for your warmth and kindness in receiving me wherever I went. Most of all, I thank you for the professionalism and standards of excellence you show everyday as you enter your workplace and strive to improve the oral health of Canadians. Thank you. The pleasure was all mine.



Sue MacIntosh is a private practice dental hygienist living in New Glasgow, Nova Scotia. She is married and has four daughters ranging in age from twelve to twenty-one years.

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The Role of the Dental Hygienist as Change Agent

Introduction

Health care evolution and reform is moving at an unprecedented speed with a mandate for change.¹ Since its professional beginnings in the early twentieth century, the role of the dental hygienist has continued to change in response to the needs and demands of society. Dental hygiene has evolved from "auxiliary status" to one with an expectation of self-regulation and autonomy, and has taken its rightful place as a profession.²

Changes in health care knowledge and practice have resulted in the expansion of the philosophy of dental hygiene to include the inter-related roles of clinician, as well as those of educator or oral health promoter, administrator, consumer advocate and change agent.² As the profession moves into times of significant and widespread change, perhaps one of the most critical roles of the dental hygienist will be that of the change agent. Utilizing key insights from the literature, this paper will address issues around change. It will identify reasons for resistance to change as well as strategies to overcome resistance. The change process will be examined as well as the role and characteristics of the dental hygienist as a change agent.

Change

Change is defined by Darby and Walsh² as the process of altering, modifying, or transforming an idea, event, individual, family, group or community. Change can be categorized in two different ways, as haphazard or planned.³ Haphazard change is random, with no effort being made by the participants to prepare for the onset of change. In contrast, planned change is a purposeful, systematic effort to alter or bring about change through some form of intervention.

Change is an inevitable reality in all modern health care organizations,⁴ and dental hygiene too is continually evolving. Factors influencing this evolution include: demographics;⁵ cultural diversity; the changing status of women in society; consumerism; the rising cost of health care; an ever-expanding knowledge base and new developments in technology; the special needs of subgroups; threats from other professional groups; and economic uncertainties.⁶

Resistance to Change

Resistance to change is experienced by people in the process of change. It is defined as any conduct that serves to maintain the status quo in the face of pressure to alter the status quo.⁴ Resistance is the most characteristic response to change,⁴ and should be viewed not as negative, but as a natural and essential part of the change process. As resistance is an inevitable element in the process of planned change, the dental hygienist in all practice settings should plan for the inclusion of interventions to overcome resistance when attempting to implement change. Whether the recommendation is to change an office procedure such as a sterilization technique or to

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implement an oral care program for a long-term care facility, the dental hygienist should be aware of reasons for resistance to change and develop strategies to help reduce resistance to the planned change.

Reasons for Resistance to Change

There are several sources of resistance to change.⁶

1. Uncertainty about the causes and effects of change.

People may resist change because they fear the unknown. They like tradition and routine because of its predictability. For example, a dental hygienist may fear the unknown when the employer announces the organization has hired a consulting firm to implement some changes to the organization.

2. Threat to self.

People may feel that the change affects them personally, such as a change in workload and responsibility or loss of self esteem or power. For example, a dental hygiene educator may resist the department's plan to expand its dependence on computer technology because he/she views the change as making his/her responsibilities more complex.

3. Lack of understanding.

When people do not understand the reasons for the change or how the change can help them they may resist change. For example, some dental hygienists may resist the trend toward higher levels of education or the need for dental hygiene research because they do not understand that society can best be served through these professional advancements.

Overcoming Resistance to Change

The dental hygienist in all practice settings can benefit from using the strategies proposed by Koller and Schlessinger⁷ to overcome resistance to change. These strategies apply just as well to implementing change in our personal lives, as a volunteer in the community, or as a member of a professional association.

1. Education and Communication.

Always inform people about the planned change and completely explain why it is necessary. Use individual, one-on-one discussions, group meetings, formal presentations, and media campaigns if necessary.

2. Participation and Involvement.

Involve potential resisters in the process of change. Resistance to change can be reduced by having those involved participate in the plan for change. Provide regular opportunities for open communication and feedback.

3. Facilitate and Support.

People in the transition of change may feel overlooked, rejected, unimportant, or inadequate. The manager must be sensitive to

the human needs of the workers by communicating support and understanding. Other activities might include staff training and development, rewards (choice of schedule, public recognition, new title, bonuses, time off), and emotional support.

4. Negotiation and Agreement.

This process seeks to achieve compromise agreements with the resisters of change. Perhaps a benefit desired by the resistor could be offered in return for support of the change.

5. External Change Agent.

When a manager predicts resistance to change, an expert external to the organization can be brought in to make recommendations for change. As in any change process, the external change agent should involve the participants who will be effected by the change. This approach is best observed in the hiring of consultants to solve specific problems in schools, institution, department, business or private practice.

The Change Process

The steps of the change process are similar to other problem-solving methods, including those of the dental hygiene process of care.⁶ Like the dental hygiene process of care, the change process provides a model for organizing and implementing change in a variety of settings.^{6, 7, 8} A commitment to the change project can empower the dental hygienist to successfully assess, diagnose, plan, implement and evaluate the change.

The change process may be targeted at an individual, organization, or community. The steps of the change process are outlined below.^{6, 7, 8}

I. ASSESS

- Recognize when a change is needed.
- Collect data to verify the problem to be solved through change, and identify the desired state that will result from the change.

II. DIAGNOSE

- Label the problem that has created a need for change.

III. PLAN

- Generate alternative solutions/approaches to the problem for which change is needed.
- Analyze the alternative approaches in terms of advantages, disadvantages, consequences of each, resources needed, cost, level of support.
- Decide upon a course of action from the alternatives analyzed.
- Design a plan for change: state objectives, outline methods, develop timetable, involve people, assign responsibilities, assign resources and monitor stability.

IV. IMPLEMENT

- Implement the plan for change.
- Monitor for unanticipated problems.

V. EVALUATE

- Determine if the desired outcome and stated objectives have been achieved as a result of the implemented change.
- If necessary, reassess the situation and modify the plan for change.

- Stabilize the change by directing human and material resources to make the change permanent. Provide incentives and reward commitment to change. Rewards and incentives should meet the human needs of the people involved.

The Role of the Change Agent

A change agent is an individual who applies a theoretical body of knowledge that focuses on a systematic approach to change.² The change agent is the individual who is responsible for taking a leadership role in managing the process of change.⁶ Dental hygienists are called on to be a change agent in various practice settings. By applying theoretical knowledge and following a systematic approach to change,² the dental hygienist can be an effective change agent.

Table I, adapted from Darby and Walsh,² outlines some of the responsibilities the dental hygienist may undertake as a change agent. Readers are encouraged to expand the outline further.

Table I

RESPONSIBILITIES OF THE DENTAL HYGIENIST AS CHANGE AGENT

Implements processes and evaluates the success of programs that promote change for clients.
Promotes the need for innovation and change in health care.
Uses current knowledge and interpersonal skills.
Works with individuals, organizations, agencies, and social institutions that have authority for, or influence on, dental hygiene education, health and practice.
Creates an atmosphere conducive to the dynamics of change and selects mechanisms that are compatible with the target of change.
Promotes the public's well-being and the attainment of dental hygiene's oral health goals for society.
Uses appropriate areas of influence to promote health for individuals, families, or communities.
Systematically develops career alternatives and develops roles for hygienists, including: • Analysis of barriers to gaining employment • Removing resistance • Changing attitudes, beliefs, and values of dental hygienists and potential employers • Instructing students in essential knowledge and skills • Placing graduates in a variety of career settings • Creating change through the legislative process.
Utilizes steps in the process of change.
Influences legislators, health agencies, and other organizations to solve existing health problems.

Characteristics of the Change Agent

Characteristics of a successful change agent include listening skills, assertiveness, perseverance, and effective communication skills.¹ A change agent has expertise in their field of practice. Expertise is based on a combination of education, skills and experience.¹ To be effective, the change agent must earn the trust and respect of the individuals involved in the change process.⁹ If change agents view change as evolutionary rather than revolutionary, the chances of a successful change will be greater, and the effects longer lasting.²

Table II, also adapted from Darby and Walsh,² outlines the roles the dental hygienist as a change agent may undertake and the settings in which they might find themselves working. As before, readers are encouraged to expand the outline further.

Table II
ROLES/SETTINGS FOR THE
DENTAL HYGIENIST AS CHANGE AGENT

Lobbyist for legislative changes in health care.
Coordinator of oral health care services for persons with disabilities.
Nursing home services director.
Client care coordinator in health care facility.
Provincial dental health program administrator.
Community project coordinator.
Entrepreneur.
Hospitals.
Community health agencies.

Recommendations for the Future

Perhaps one of the most critical attributes for dental hygienists will be the ability to deal positively with change. Change is an inevitable reality of health care.⁴ Similar to the dental hygiene process of care, the change process provides a model for organizing and implementing

change in a variety of settings.^{6, 7, 8} The literature presents numerous discussions of the various change theories the nursing profession uses to guide the process of planned change.^{9 10} It may be valuable to include change theory and a discussion of the change process in dental hygiene curricula at both the diploma and baccalaureate levels. This theoretical knowledge could provide a framework for dental hygienists to become more effective in the role of change agent in all practice settings.

Conclusion

Change will occur whether we like it, plan for it, or try to ignore it. Dental hygiene, like all health professions, continues to be in a period of rapid change. The pace of change challenges all dental hygienists in all practice settings to be effective change agents. As resistance is an inevitable element of change, due consideration of the reasons for resistance to change and the development of planned interventions to overcome resistance are critical to the change agent's role.⁴ Dental hygienists function as change agents in a variety of practice settings. Every dental hygienist can be an effective change agent, assisting individuals, organizations and communities by applying theoretical knowledge and a systematic approach to change.²

References

1. Strunk, B.L.: The Clinical Nurse Specialist as Change Agent. *Clinical Nurse Specialist* 95, 9(3): 128-132
2. Darby, M.L., Walsh, M.M.: "The evolving profession of dental hygiene." In: Darby, M.L., Walsh, M.M. eds. *Dental Hygiene Theory and Practice*, Toronto: WB Saunders, 1995. pp 3-23.
3. Taylor, C., Lillis, C., and Le Mone, P.: *Fundamentals of Nursing*, 2nd ed. Philadelphia: J.B. Lippincott, 1993.
4. McKay, L.: "Overcoming Resistance to Change." *Canadian Journal of Nursing Administration* 1993, 6(1): 6-9.
5. Friedman, E.: Health Care's Changing Face: the Demographics of the 21st Century. *Hospitals* 1991, 4(1): 36-40.
6. Darby, M.L., Walsh, M.M.: "Dental hygiene management and leadership." In: Darby, M.L., Walsh, M.M. eds. *Dental Hygiene Theory and Practice*, Toronto: WB Saunders, 1995. pp. 1016-1020.
7. Kotter, J.P., Schlesinger, L.A.: Choosing Strategies for Change. *Harvard Business Review* 1979, 57(2): 106.
8. Potter, P.A., Perry, A.G.: *Fundamentals of Nursing*, 3rd ed. St. Louis: Mosby-Year Book, 1993.
9. Mullen-Kaplan, S.: The Nurse as a Change Agent. *Pediatric Nursing* 1990, 16(6): 603-618.
10. Kreidler, M.C., Campbell, J., et al.: A Nursing Center's Use of Change Theory as a Model. *Journal of Gerontological Nursing* 1994, 20(1): 25-30.

WALKING A TIGHTROPE—FINDING THE BALANCE

(continued from page 75)

7. In serious cases, if the situation is getting progressively worse or if you believe you have been terminated unfairly, you may want to consult with The Canadian Human Rights Commission or the Ministry of Labour or even seek legal counsel to make sure that you have been compensated fairly and that your human rights have not been violated. In addition, if you have obtained counselling, your counsellor may be able to advocate on your behalf.

8. Look into the possibility of other work situations—part-time, self-employment as a hygienist, contract work, or temporary work. You may even want to consider retraining and a career switch.
9. Always remember that you have a choice. The choice may be the lesser of two evils, but you do have a choice. The key is to make a healthy decision.

When work becomes a serious problem and we start walking a tightrope where we have to balance everything we say and do, it is time to step back. In the immortal words of Gopher (from Winnie the Pooh), "There's only one thing to do... and that'sss resstore the balance". (*Winnie the Pooh—Fast Friends*)

National Institute of Nutrition (NIN) Fact Sheet

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HEALTHY B I T E S



... from the National Institute of Nutrition (NIN)

Winter 1997

84

Something to Chew on . . .

Biting into a crunchy apple or carrot stick can be one of life's pleasures, if your teeth and gums are up to the challenge. To keep your mouth in good shape, healthy eating and proper dental care go hand-in-hand.

Fighting Those Nasty Cavities

Every time you eat, you are feeding not only yourself, but also the bacteria that live in your mouth! Most are harmless, but some can multiply and build up on your teeth and gumline to form "plaque". They produce acids that break down the tooth, eventually forming a cavity.

The key to dental health is to fight cavities on several fronts: build healthy teeth and gums, limit the feeding of the mouth bacteria, and keep your teeth clean.

Inside Out — What you eat affects your health from the inside out, including the health of your teeth and gums. Go for balance: eat plenty of grain products and vegetables and fruit, rounded out with milk products and meat and alternatives.

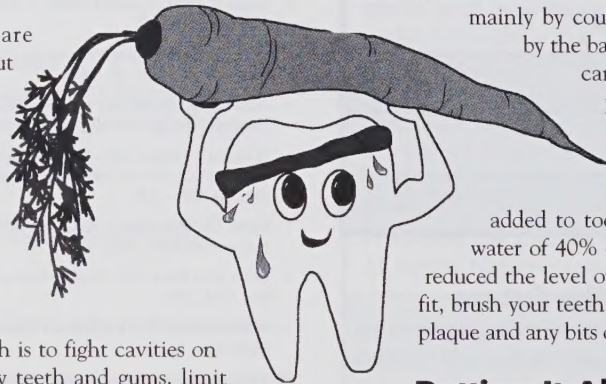
Starve the Bacteria — You have probably heard that the bacteria that cause cavities thrive on table sugar. They can also dine on other carbohydrates, such as the sugars in fruits and in milk, and even the starches in breakfast cereals, cookies, crackers and other grain products.

The total amount of carbohydrate you eat matters, but it is more important to look at *how often* you eat these foods and *how long* the teeth are exposed. So frequent snacking on foods that contain sugars or starches, especially if they stick to the teeth, can cause problems.

High-protein foods like nuts, eggs and meat do not promote cavities. Cheese can even give some protection, mainly by counteracting the acids produced by the bacteria. Sugar-free chewing gum can also help by increasing the production of saliva, which fights cavities.

Keep Your Teeth Clean

— The fluoride added to toothpaste, and to the drinking water of 40% of Canadians, has significantly reduced the level of cavities. To get the full benefit, brush your teeth after eating to sweep away the plaque and any bits of food.



Putting It All Together

Here are some tips to keep your teeth healthy:

- Brush your teeth after eating, using fluoride toothpaste, and floss every day.
- When brushing is not possible, rinse your mouth with water or chew sugar-free gum.
- Curb the number of times throughout the day that you snack on foods containing sugars or starches. Don't forget that vegetables, cheese and nuts make great snacks!
- Try not to prolong sipping of beverages containing sugars or acids, such as carbonated or sports drinks, juices or coffee.



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Rapport



The Effect of Diet on Dental Health

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Despite the decrease in prevalence of dental caries over the past 20 years, the direct cost of dental illnesses ranks second in the United States¹ and a close third in Canada behind cardiovascular disease and mental disorders.² Overall, people are enjoying better dental health today but a few large segments of the population, such as the elderly and the poor, continue to experience most tooth decay.³ Dental caries is a complex disease influenced by many factors, including the individual's oral hygiene, health status and diet. This review looks at how dental health and diet are related.

Dental Health

TOOTH DEVELOPMENT AND CARIES RISK

Normal growth and development of the oral cavity and teeth requires adequate nutrients.^{4, 5} The effects of vitamins A, C and D, and minerals such as calcium and fluoride, on the hard and soft tissues of the mouth may be important both during critical developmental stages and throughout life. In fact, one episode of mild to moderate malnutrition in the first year of life may lead to an increased incidence of caries later on.⁴

Low birth weight (<2000 g), often an indication of poor maternal nutrition, has been linked with a higher incidence of enamel defects,⁶ increasing the risk for dental caries.⁴ Studies have suggested that supplementation of vitamin D deficient women during pregnancy can halve the incidence of abnormal enamel development in offspring.⁷

THE DENTAL DECAY PROCESS

Dental caries is one of the most common infectious diseases. Its etiology involves not only nutritional status, but also bacteria, salivary flow, genetics, dietary and hygiene behaviours and overall health.

Dental caries result when acid-producing bacteria, especially *mutans streptococci* and *lactobacilli* species, dominate the bacterial coating on the tooth surface called plaque.⁸ These bacteria mainly metabolize dietary fermentable carbohydrates (e.g., glucose and fructose; sucrose, maltose and lactose; cooked starch) into lactic acid, making the plaque acidic. This causes demineralization of the tooth enamel and the underlying dentin, leading eventually to loss of tooth structure and further bacterial invasion.⁸

A recent review conducted in North America, Europe and Africa concluded that it is the cariogenicity of the diet, not the extent of bacterial infection, that determines the severity of dental decay.⁹

Saliva contains caries-protective factors, including fluoride, calcium and phosphorus, buffers and anti-microbial agents.¹⁰ Protection increases when salivary production is stimulated, as occurs during the chewing process. Saliva's volume, composition and antibacterial

and physicochemical properties are severely altered in malnutrition,¹¹ leading to increased caries.^{12, 13} Rampant tooth decay is frequently observed in people with reduced salivary flow.¹⁴

Dietary Considerations

FLUORIDE EXPOSURE

The use of fluoride to prevent dental caries has been lauded as one of the most successful preventive health measures in the history of Canadian health care.¹⁵ Over 40% of the Canadian population receives fluoridated water.¹⁶ Other sources include food products containing fluoridated water, as well as supplements, toothpaste and mouth rinse.

The decrease in caries prevalence seen in North America¹⁷ and Europe,¹⁸ despite stable sugars consumption,¹⁹ is largely due to increased fluoride exposure and behaviour change resulting from public education.¹⁷ In some adolescent populations that are mostly caries-free, it can be seen that six or seven daily intakes of fermentable carbohydrates can be compatible with a low caries risk when fluoride is available, provided teeth are brushed regularly with a fluoridated toothpaste.²⁰

Fluoride works primarily as a topical agent and its effects are cumulative: subjects exposed to fluoride since birth experience the lowest rates of caries.²¹⁻²³ The optimum level of exposure from the diet is approximately 1 mg/d,²³ but this may be exceeded in some age groups in Canada.²⁴

FOOD CARIOGENICITY

Caries incidence is affected by factors related to food and how it is consumed:^{5, 25-29} the total amount and specific kind of fermentable carbohydrates; food composition, particularly acidity and sugars concentration; retentiveness of food form, affecting how long the teeth are exposed to acid; frequency of fermentable carbohydrates ingestion, influencing the average oral pH; and the sequence or combination of food consumption, with some foods buffering the pH drop.

The total amount of fermentable carbohydrates consumed and the concentration of sugars in a food, although important, are not as critical as the frequency of eating fermentable carbohydrates and the retentiveness of the food.³⁰

The relative cariogenicity of particular foods is difficult to determine given the numerous variables that contribute to caries, individual differences in food intake and fluoride exposure, and the complexity of food ingredients and textures.^{28, 29} Measuring acid production in dental plaque has shown, for example, that whole wheat bread is more acid forming than dates, raisins or bananas,²⁵ and that chocolate and apples produce similar responses.²⁶

Individual foods can therefore only be crudely rated as being cariogenic (carbohydrates) or noncariogenic (fats and proteins). Generally, however, a highly cariogenic food is one that dissolves slowly or has prolonged oral retention, has a high concentration (more than 15%) of sugars or starches, is eaten often between meals and lowers plaque pH.²⁹

Carbohydrates

The availability of sugar in a particular country is associated with the dental decay rate in its children.³¹ Historically, much attention has been focused on sucrose, the most common form of sugar consumed world-wide.¹⁷ Continued exposure to sucrose promotes the emergence of a more acid-resistant (and thus more cariogenic) flora. Furthermore, the sticky polysaccharide matrix formed from sucrose serves as stored energy and promotes plaque formation.⁸ However, other fermentable carbohydrates can also contribute to dental decay. Glucose and fructose, for example, present in high proportions in the diet, may be as cariogenic as sucrose.^{32, 33}

Recently, it has been recognized that even complex carbohydrates can play a role in cariogenicity. The conversion of cooked starches to maltose via salivary amylases can result in prolonged exposure to acid. In fact, snacks high in starch, especially gelatinized, baked or fried,^{34, 35} can produce as much acid in plaque as sucrose.^{36, 37} Without adequate oral hygiene, acid production may persist for more than an hour when bread, crackers, potato chips or breakfast cereals are eaten.³⁶ Animal studies suggest that a starch-sucrose combination in foods may be more cariogenic than sucrose alone.³⁸

Alternative Sweeteners

Sugar alcohols such as mannitol and sorbitol can be considered noncariogenic because, as a result of their slow fermentation, buffering by the saliva is able to prevent a drop in plaque pH.³⁹ Xylitol is anticariogenic, and its habitual use tends to decrease both the amount of plaque and its caries-producing ability.^{40, 41} The health claim, "Clinically proven to reduce cavities by up to 62% when used in conjunction with a proper oral hygiene program..." is now allowed on xylitol-containing chewing gum in Canada. High-intensity sweeteners, such as aspartame and sucralose, are considered to be noncariogenic.

Protective Foods

Cheeses, such as cheddar and mozzarella, have been shown to have caries-protective properties,^{28, 42} for which many mechanisms have been proposed.²⁸ Components in cheese such as fat and casein have been shown *in situ* (intra-orally) to provide some protection against the harmful effects of acids.⁴³ Caseinates and other organic phosphates in dairy products can be adsorbed onto the tooth surface, inhibiting the adhesion of plaque.⁴⁴ The calcium-phosphate buffering systems help protect against tooth demineralization through effects on saliva and plaque.²⁸

Other high-protein foods such as meat, nuts and legumes are converted into alkaline end products by oral bacteria, suggesting protection against caries.⁴⁵ Dietary fats may also be beneficial by decreasing a food's stickiness and enhancing its clearance from the teeth.⁴⁶

Special Risk Factors

The multifactorial nature of dental caries highlights the need to consider factors such as behaviour, medical conditions and nutritional status when determining individual risk.

BEHAVIOURS

Even with fluoride exposure, some infants and toddlers are at risk for caries, or serious damage to primary teeth, through frequent and extended exposure to lactose. This preventable condition is usually related to prolonged bottle feedings and, in rare cases, *ad libitum* breastfeeding.⁴⁷

Eating patterns, such as frequent snacking or sipping of beverages, could increase the risk of dental problems if fermentable carbohydrates are included and appropriate oral hygiene does not follow.

The loss of tooth enamel and exposure of dentin due to acid exposure is known as *dental erosion*. Frequent consumption of acidic fruits or juices, soft drinks and vinegar-based preserves is a common cause, and excessive fruit consumption by harvesters has been associated with increased caries.²⁷ Likewise, the repeated tooth exposure to strong gastric acids in people with bulimia nervosa causes severe erosion.⁴⁸

MEDICAL CONDITIONS

Chronic diseases and other conditions, as well as their treatments, can have an effect on dental health. People with diabetes are at higher risk of developing caries; potential causes include increased salivary glucose levels in poorly controlled diabetes,⁴⁹ and reduced salivary flow and xerostomia (dry mouth).^{50, 51}

The consumption of frequent small meals, as is common during pregnancy and is recommended for certain medical conditions including cystic fibrosis, AIDS and cancer, may compromise dental health.

Medications often used in treating HIV infection, cancer, autoimmune diseases, depression and cardiovascular diseases can reduce salivary flow and may also hinder the ability to ingest, digest and absorb an adequate diet.⁵² Anti-cancer therapies often produce oral complications; for example, radiation treatment of the upper throat area may result in loss of teeth and xerostomia.⁵²

Some prescription and over-the-counter drugs contain high (20% to 60%) levels of sucrose. This is of concern for small children and infants with frequent use of medications, particularly before establishing oral hygiene practices.⁵³

A higher incidence of chronic diseases and multiple drug use, xerostomia, dentures, cognitive or physical impairments as well as poor oral hygiene make the elderly population more vulnerable to dental problems.^{54, 55} Tooth loss is common in seniors with compromised health.⁵⁶ Seniors are also particularly susceptible to the nutritional effects of poor dental health. Among the frail elderly, for example, poor oral health is an important contributing factor to involuntary weight loss,⁵⁷ linked with increased morbidity and mortality. A useful example of a screening model is an oral health checklist developed in the United States.⁵⁸

Promoting Dental Health

PUBLIC HEALTH CONSIDERATIONS

A healthy diet is essential for dental health. However, some dietary patterns can promote tooth decay, especially without adequate dental hygiene and fluoride intake. Current nutrition recommendations promoting an increase in the intake of grains, vegetables and fruit may be perceived as detrimental to dental health. It should thus be

stressed that the frequency of intake of fermentable sugars or starches and the duration of tooth exposure to these carbohydrates remain the key concerns.

Regular tooth brushing with a fluoridated toothpaste cannot be overemphasized. If brushing is not possible during the day, rinsing the mouth with water, eating a piece of cheese or chewing sugar-free gum immediately after eating may help to limit the pH drop in dental plaque and the resulting loss of minerals from the underlying tooth structure.

Strategies to prevent sustained acidity in the oral cavity include curbing the frequent use of sugar- or starch-containing snacks, and limiting frequent sipping of sugar-sweetened or acidic beverages such as carbonated beverages, sports drinks, juice or coffee. A nursing bottle containing plain water can be used to pacify an infant, and soothers should not be sweetened.

CLINICAL CONSIDERATIONS

When nutritional status is compromised, the common dietary treatment of frequent small feedings should be coupled with dental health education emphasizing personal oral hygiene. Foods having minimal acid-causing potential, such as cheese, nuts, eggs, meat, poultry, fish or vegetables, may be encouraged to accompany sweet or starchy snacks. Replacement of sugars with nonfermentable alternative sweeteners may also be appropriate if there is no concern about reducing the individual's energy intake. If xerostomia is present, salivary stimulation or saliva substitutes can be beneficial. Unless contraindicated, medications containing sugars, including chewable vitamins and tablets, are best taken with a meal when saliva flow is higher, followed by tooth brushing.

Conclusion

Strong teeth and a healthy mouth make eating more effective and enjoyable. Dental health depends heavily on nutritional status as well as oral hygiene, fluoride exposure, dietary habits, heredity, general health and use of medications. The major factors influencing the cariogenicity of the diet are the frequency of eating fermentable carbohydrates and the retentiveness of the food. Any food pattern consisting of frequent small feedings of cariogenic foods may thus increase the risk of dental decay. However, the effects can be curtailed by healthy eating coupled with proper oral hygiene and exposure to fluoride.

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References

1. U.S. Department of Health and Human Services: *The Surgeon General's Report on Nutrition and Health*. Washington, DC: U.S. Government Printing Office, 1988; DHHS (PHS) Publ. No. 88-50211
2. Leake J.L., Porter J., Lewis D.W.: A macroeconomic review of dentistry in the 1980s. *Can Dent Assoc J* 1993; 59: 281-287
3. Hunter P.B.: Risk factors in dental caries. *Int Dent J* 1988; 38: 211-217
4. Alvarez J.O.: Nutrition, tooth development, and dental caries. *Am J Clin Nutr* 1995; 61: 410S-416S
5. DePaola D.P., Faine M.P., Vogel R.I.: Nutrition in relation to dental medicine, in *Modern Nutrition in Health and Disease*, Shils E.M., Olson J.A., Shike M. (eds), 8th ed. Philadelphia: Lea & Febiger, 1994: 1007-1028
6. Fearn J.M., Bryan E.M., Brook A.H.: Enamel defects in the primary dentition of children born weighing less than 2000 g. *Br Dent J* 1990; 168: 433-437
7. Cockburn F., Belton N.R., Purvis R.J. et al: Maternal vitamin D intake and mineral metabolism in mothers and their newborn infants. *Br Med J* 1980; 281(6232): 11-14
8. van Houte J.: The role of micro-organisms in the caries etiology. *J Dent Res* 1994; 73: 672-681
9. van Palenstein Helderma W.H., Matee M.L.N., van Hoeven J.S. et al: Cariogenicity depends more on diet than the prevailing mutans streptococcal species. *J Dent Res* 1996; 75: 535-545
10. Leverett D.H., Featherstone J.D.B., Proskin H.M. et al: Caries risk assessment by cross-sectional discrimination model. *J Dent Res* 1993; 72: 529-537
11. Johansson I., Ericson T., Steen L.: Studies on the effect of diet on saliva secretion and caries development: the effect of fasting on saliva composition of female subjects. *J Nutr* 1984; 114: 2010-2020
12. Johansson I., Saellstrom A.-K., Rajan B.P. et al: Salivary flow and dental caries in Indian children suffering from chronic malnutrition. *Caries Res* 1992; 26: 38-43
13. May R.L., Goodman A.H., Meindl R.S.: Response of bone and enamel formation to nutritional supplementation and morbidity among malnourished Guatemalan children. *Am J Phys Anthro* 1993; 92: 37-51
14. Spak C.J., Johnson G., Ekstrand J.: Caries incidence, salivary flow rate and efficacy of fluoride gel treatment in irradiated patients. *Caries Res* 1994; 28: 388-393
15. Crawford P.R.: Fifty years of fluoridation. *J Can Dent Assoc* 1995; 61: 585-588
16. Health and Welfare Canada: Fluoridation in Canada as of December 31, 1986. *Document 88-EHD-137*; 1988: 10
17. Burt B.A.: Relative consumption of sucrose and other sugars: has it been a factor in reduced caries experience? *Caries Res* 1993; 27: 56S-63S
18. Mathaler T.M.: Changes in the prevalence of dental caries: how much can be attributed to changes in diet? *Caries Res* 1990; 24: 3S-15S
19. Sugar and HFCS disappearance per capita—Canada. 1996. *Canadian Sugar Institute*. S. Marsden (pers comm)
20. König K.G., Navia J.M.: Nutritional role of sugars in oral health. *Am J Clin Nutr* 1995; 62: 275S-283S
21. Fejerskov O., Larsen M.J., Richards A: Dental tissue effects of fluoride. *Adv Dent Res* 1994; 8: 15-31
22. Groeneveld A., van Eck A.A.M.J., Backer Dirks O: Fluoride in caries prevention: is the effect pre-eruptive or post-eruptive. *J Dent Res* 1990; 69: 751S-755S
23. Ismail A.I.: What is the effective concentration of fluoride? *Com Dent Oral Epidemiol* 1995; 23: 46-51
24. Lewis D.W., Limeback H.: Comparison of the recommended and actual mean intakes of fluoride by Canadians. *J Can Dent Assoc* 1996; 62: 708-709, 712-715
25. Edgar W.M., Bibby B.G., Mundorff S. et al: Acid production in plaques after eating snacks: modifying factors in foods. *J Am Dent Assoc* 1975; 90: 418-425
26. Rugg-Gunn A.J., Edgar W.M., Jenkins G.N.: The effect of eating some British snacks upon the pH of human dental plaque. *Br Dent J* 1978; 145: 95-100
27. Grobler S.R., Blignaut J.B.: The effect of a high consumption of apples or grapes on dental caries and periodontal disease in humans. *Clin Prev Dent* 1989; 11(1): 8-12
28. Papas A.S., Joshi A., Belanger A.J. et al: Dietary models for root caries. *Am J Clin Nutr* 1995; 61: 417S-422S
29. Papas A.S., Joshi A., Palmer C.A. et al: Relationship of diet to root caries. *Ibid*: 423S-429S
30. Edmondson E.M.S.: Food composition and food cariogenicity factors affecting the cariogenic potential of foods. *Caries Res* 1990; 24: 60S-71S
31. Sreebny L.M.: Sugar availability, sugar consumption, and dental caries. *Comm Dent Oral Epidemiol* 1982; 10: 1-7
32. Forstell G., Blomqvist T., Bruer P. et al: Reduction in caries in pre-school children by sucrose restriction and substitution with invert sugar: *the Gustavsberg Study*. *Acta Odontol Scand* 1981; 39: 333-347
33. Loesche W.J.: Sucrose substitutes, in *Dental Caries: A Treatable Infection*, Loesche W.J. (ed), *Automated Diagnostic Documentation Inc*, 1993: 377-405

Now that the warmer weather is here, our thoughts turn to vacationing and our days are filled with mostly outdoor activities. Fellow Canadians enjoy! But if you find yourself "thirsting" for knowledge instead of lemonade, check out these web sites.

At <http://www.ada.org/consumer/ncdhn/nc-menu.html> I found the following quote,

"In many dental offices today, children with cavity-free smiles are easier and easier to find. That's because dentists and parents have decided to seal out childhood tooth decay with dental sealants."

The American Dental Association (ADA) is online with their ADA ONLINE web site. February was National Children's Dental Health Month and at this site the ADA addresses several children's dental health issues including the hot topic of dental sealants. This address contains a multimedia section (video/slide presentation), news releases, a fact sheet, ADA reports, and options to view other related literature on sealants or other more general children's dental health resources. Do not forget to bookmark the ADA homepage for future reference because they update the site regularly. It is an excellent dental hygiene resource site.

Another great dental hygiene resource is the MEDLINE site of HealthGate. At this site you can read through abstracts of research texts on a variety of topics—plus they give you opportunity to order the full text (for a fee of course). Here's how I find my way around this detailed site. First locate this address:

<http://www.healthgate.com/HealthGate/MEDLINE/search.shtml>

In the space titled "Enter search terms" type in "dental hygiene resources" (I limited my search to English and I'm not sure if that made a difference or not). Then you will find a number of abstracts that you can check out at leisure. Number six discusses how RN's lack of oral health knowledge may lead to inadequate oral care being

delivered to patients in hospital wards, and number eight "Rationale of Mechanical Plaque Control" is an excellent read. Here's a quote just to tempt you:

"The frequency of maintenance visits must be given on an individual basis according to the needs of every special patient. The visit includes plaque evaluation (disclosing), oral hygiene instruction, probing depth measurements, registration of bleeding upon probing, scaling (plaque removal) if indicated, tooth polishing, fluoride application and radiographs if indicated. The goal is to identify and treat signs of recurrence of periodontal disease in order to prevent further loss of attachment."

In this site movement from one abstract to another is tricky. On the left of the screen is a blue index section. Click on the word MEDLINE and begin again by typing in "dental hygiene resources". This is a nuisance but you may strike a gold mine of worthwhile information—who knows!

Until next time, continue to make use of technology to expand your knowledge base. This will translate into an improved performance level whether you are a clinical hygienist, educator, or researcher. Remember, E-mail me anytime at rwolf@atcon.com.

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34. Lingstrom P, Birkhed D, Ruben J, et al: Effect of frequent consumption of starchy food items on enamel and dentin demineralization and on plaque pH in situ. *J Dent Res* 1994; 73(3): 652-660
35. Grenby T.H.: Snack foods and dental caries. Investigations using laboratory animals. *Br Dent J* 1990; 168: 353-361
36. Mormann J.E., Muhlemann H.R.: Oral starch degradation and its influence in acid production in human dental plaque. *Caries Res* 1981; 15: 166-175
37. Brudevold F, Goulet D, Attarzadeh Fetal: Demineralization potential of different concentrations of gelatinized wheat starch. *Caries Res* 1988; 22: 204-209
38. Firestone A.R., Schmid R., Muhlemann R.: Cariogenic effects of cooked wheat starch alone or with sucrose and frequency-controlled feedings in rats. *Arch Oral Biol* 1982; 27: 759-763
39. Imfeld T.H., Muhlemann H.R.: Evaluation of sugar substitutes in preventive cariology. *J Prev Dent* 1977; 4(2): 8-14
40. Makinin K.K., Bennett C.A., Hujoel P.P. et al: Xylitol chewing gums and caries rates: a 40-month cohort study. *J Dent Res* 1995; 74: 1904-1913
41. Trahan L.: Xylitol—a review of its action on mutans streptococci and dental plaque: its clinical significance. *Int Dent J* 1995; 45: 77-92
42. Herod E.L.: The effect of cheese on dental caries: a review of the literature. *Aust Dent J* 1991; 36(2): 120-125
43. Silva M.F., Burgess R.C., Sandham H.J.: Effects of cheese extract and its fractions on enamel demineralization in vitro and in vivo in humans. *J Dent Res* 1987; 66(10): 1527-1531
44. Papas A.S., Palmer C.A., Rounds M.C. et al: Longitudinal relationships between nutrition and oral health. *Ann NY Acad Sci* 1989; 561: 124-142
45. Bowen W.H.: Food components and caries. *Adv Dent Res* 1994; 8(2): 215-220

46. Hayes M.L., Berkovitz B.K.B.: The reduction of fissure caries in Wistar rats by a soluble salt of nonanoic acid. *Arch Oral Biol* 1979; 24: 663-666
47. Johnsen D., Nowjck-Raymer R.: Baby bottle tooth decay: issues, assessment, and an opportunity for the nutritionist. *J Am Diet Assoc* 1989; 89: 1112-1115
48. Gilmour A.G., Beckett H.A.: The voluntary reflux phenomenon. *Br Dent J* 1993; 173: 368-372
49. Twetman S., Nederfors T., Stahl B. et al: Two-year longitudinal observations of salivary status and dental caries in children with insulin-dependent diabetes mellitus. *Pediatr Dent* 1992; 14(3): 184-188
50. Ben-Aryeh H., Cohen M., Kanter Y. et al: Salivary composition in diabetic patients. *J Diab Compl* 1988; 2(2): 96-99
51. Holdren R.S., Patton L.L.: Oral conditions associated with diabetes mellitus. *Diab Spect* 1993; 6(1): 11-17
52. Position of the American Dietetic Association: oral health and nutrition. *J Am Diet Assoc* 1996; 96(2): 184-189
53. Limeback H.: Xylitol and dental caries. *Can Pharm J* 1990; 123: 60-65
54. Hase J.C., Birkhed D.: Oral sugar clearance in elderly people with prosthodontic reconstructions. *Scand J Dental Res* 1991; 99(4): 333-339
55. Dolan T.A., Atchison K.A.: Implications of access, utilization and need for oral health care by the non-institutionalized and institutionalized elderly on the dental delivery system. *J Dent Educ* 1993; 57: 876-885
56. Loesche W.J., Abrams J., Terpenning M.S. et al: Dental findings in geriatric populations with diverse medical backgrounds. *Oral Surg, Oral Med, Oral Path, Oral Rad & Endo* 1995; 80(1): 43-54
57. Sullivan DH, Martin W, Flisman N et al: Oral health problems and involuntary weight loss in a population of frail elderly. *J Am Geriatr Soc* 1993; 41: 725-731
58. Nutrition Screening Initiative: Nutrition Interventions Manual for Professionals Caring for Older Americans. Washington, DC: Nutrition Screening Initiative, 1992

The Dental Hygienist and the Senior Client

With more dental hygienists interested in providing oral health services to seniors, it has become increasingly important to understand the special needs and attributes of this segment of the population. The size, age, health, cultural diversity and socio-economic status of seniors will have direct implications on dental hygiene care offered in traditional office settings, health units and self-employment ventures. This article is intended to help dental hygienists understand and prepare to meet the needs of this population.

Definitions of Age and Population Segmentation

Who is a senior? Seniors have been defined by various age groupings. Government tends to use statistical information about those over 60–65 to determine the projected social planning needs. Discounts for seniors can start at age 50 and most “seniors clubs” include those aged 50 and up. Older adults will not see themselves as senior meaning aged, but senior meaning more experienced and wiser. The term “over 65” was originally an actuary’s number used by German Chancellor Otto Van Bismarck in the 1880s to determine a mandatory retirement age. Since most workers died before this age, it was a simple but astute political decision in the 1800s.

What is the lifespan of a healthy adult? The 65-year age of retirement persists today, though people are living, on average, about 20 years longer. In 1991, Dr. Harold Loe, Director of the National Institute of Dental Research at the U. S. National Institute of Health addressed this in his keynote speech at the International Symposium at the University of Toronto. In his thesis in “Periodontal Care for Older Adults”, he proposed that “in the absence of disease, several lines of reading converge on a figure between 110 and 120 (years) as the maximum human lifespan.”¹ This suggestion should give us all pause for thought.

Seniors can be divided into two categories, namely, “health status” when they start requiring greater amounts of health services, or “dependent status” when they are no longer able to care for themselves independently. Health care providers, hospitals, nursing homes and insurance plans, regularly analyze the statistical data about both categories to understand their effect on the methods and costs of service delivery.

“In the 1990s, we have both an aging population and a slow-growing seniors’ market... We have an aging population because the largest single group, the 9.8 million baby-boomers, are entering their middle years. The seniors’ market is growing slowly because new entrants will be those born during the 1930s... when few people were born in Canada.”²

David Foot, in presenting a demographic approach to the market has designated three age levels for seniors: young seniors, those 65 to 74; mid-seniors, from 75 to 84; and senior seniors aged 85 and up. He recommends approaching them all differently, because the three groups have very different lifestyles.

Young seniors are still healthy and spend a lot of time and money travelling. These are Canadians born between 1930 and 1939. While many of them experienced life as a struggle during the depression and the Second World War, they were so few in number that during the post-war boom in the economy, they never worried about finding a job or being promoted. Most had three or four children, they were the fathers and mothers of the baby boom. This group had limited oral health care in their childhood, but access to excellent services in their adult years and thus retain most of their teeth. “Few of them realize how much they owe their success to being part of a small cohort that has always been in the right place at the right time.”³

Mid-seniors are typically still living at home, but health problems are making them less mobile. These people were born between 1920 and 1929. They represent a fairly large group, they were the babies born after the losses of the First World War, able to find work during the war effort in the 40s: they have been fairly successful. This group has had some dental care but on average they retain fewer teeth than the younger group.

Many senior seniors are in residential homes,⁴ and approximately 25 percent of this population receive nursing home care. In cases in which families have assumed the responsibility of caring for this age group, seniors are usually women who have accumulated less wealth in their working years. Many of these seniors are edentulous or retain only a few of their natural teeth.

These very differences affect the level of oral care required, and they even affect the site where dental hygienists provide their service. In the Regional Municipality of Haldimand–Norfolk, Ontario, for example, demographic data indicates that in 1991, 14.4 percent of the population was 66 years of age and over, with 5.9 percent over 75 years old. In Simcoe, the largest town in the region, the percentage of the population over 66 was 18.3 percent.⁵ By comparison, in Victoria, BC, a favourite retirement spot, the percentage was 28 percent. As the population ages and the baby boomers start to enter the senior years, we will see these figures change quite dramatically.

Health

Every dental hygienist knows the importance of preparing a complete medical history prior to initiating dental hygiene care. What may not be as clear are the forces that have influenced the client’s medical history, which may also impact on the care provided.

Do health problems increase with age? Does physiological aging limit the older person’s activities? In one Canadian study, 65 percent of people aged 65–74 years old, and 57 percent of people aged 75 and over, reported good or excellent health. The study also found that 80 percent of people aged 65–74 years old, and 76 percent of people aged 75 and over, said they felt very satisfied or somewhat satisfied with their health. Older people adapt to changing physical problems, by adapting their expectations and activities. Only beyond

the age of 80 does this picture begin to change significantly.”⁶ Studies on successful aging show that this “depends [not only] on good self-reported health and the absence of disease, but also on psychosocial influences like a spouse’s well-being and good mental status.”⁷

“The health care system seems to be built on the assumption that all you have to do is make sure there is a doctor and a hospital bed available when a Canadian needs one.”⁸ Further research indicates that “in general, health care cannot compensate for ill effects imposed by adverse socio-economic and environmental conditions.”⁹

“During the 1990s, the fastest-growing segment of the population is the over-80 population, mostly poor older women born before the First World War [few had careers of their own and no transferable pensions from spouses] ... They will continue to put stress on their children and the chronic care facilities ... As the current young senior group moves into the senior category they will become fewer in number and [being wealthier] will be better able to finance their own care.”¹⁰

Drugs are a serious cause for concern in caring for the elderly. “In 1995, the Canadian Medical Association Journal published a study that found that the doctors who wrote the most prescriptions also had the highest death rates among their patients ... [suggesting that] they did not take the time necessary to find out what was wrong with these patients.”¹¹

Dr. Larry Bryan of the University of Calgary estimates that:

- between one- and two-thirds of the antibiotics prescribed in Canada are used unnecessarily or inappropriately¹²
- even in hospitals, inappropriate use of these products can be as high as 40 percent;¹²
- although seniors represent 12 percent of the Canadian population, they account for 28–40 percent of all prescriptions. Unnecessary prescribing, misuse of medications and inappropriate prescriptions can contribute to the risk of drug-related illness and result in unwarranted costs in health care delivery;¹³
- an estimated 5–23 percent of hospital admissions are due to drug-related illness¹³
- the cost of inappropriate prescribing for Canadian hospitals is estimated to be between \$256 million and \$1 billion¹³
- among patients who receive drug treatment, between 23 and 29 percent are prescribed therapy that is potentially inappropriate¹³
- one-quarter of all potentially inappropriate drug combinations are created because of prescriptions written by two physicians treating the same patient;¹³
- older people are often unable to clear drugs from their systems as quickly as younger adults. A dosage that is safe for a younger person may well represent an overdose for a senior;¹⁴
- drug-induced mental confusion, ulcers, intestinal bleeding and dizziness resulting in falls, are all too common among this vulnerable population;
- those over the age of 65 who use psychotropic drugs have a 70 to 100 percent greater risk of hip fracture. Between 10 and 15 percent of patients with hip fractures die within a year, 50 percent lose the capacity to walk independently, and up to one-third of those formerly living independently will require long-term nursing home care; and¹⁴
- many seniors will further contribute to the potential drug-induced illness by ingesting “over the counter” self-medication.

It would be wise for the dental hygienist to review all forms and sources of medication, prescription or otherwise, and to examine the consequences of the combinations. It is worth suggesting to each client to list all the medications they use, and recommend to them that they regularly review this list with each health practitioner they see, including their pharmacist.

Another important part of the medical history that has great implications for dental hygienists in providing quality care, is a review of the client’s diet. The National Forum on Health has been advised that “independently living seniors have one or more chronic conditions that could be improved with better nutrition and a more active lifestyle.” Specifically the report noted that

- as people age, they tend to become less physically active. This decline in physical activity results in such low energy requirements that it is impossible for them to obtain proper nutrition without eating more than the body requires for homeostasis. As it has been proven that people who become more physically active are likely to improve their eating patterns as well, it is important to promote changes in both behaviours at the same time;
- social support is especially important for older women, who are often discouraged from being physically active by family members and constrained in their personal activities due to their role as caregiver to a spouse or relative;
- role models of active older adults need to be recognized and promoted.¹⁵

The National Forum on Health stated: “Feelings of low self-esteem, powerlessness and uselessness undermine one’s commitment to health maintenance. For example, many older people fail to get the dental work they need because they think that their teeth are not worth the expense. Unfortunately, this decision restricts chewing ability and can result in serious nutritional consequences.”¹⁶

Diversity

Not only are there differences in seniors’ groupings, but within each group one must be aware of cultural differences. As dental hygienists go out more into the community and especially into private homes, it is becoming more and more important to understand the culture of the client being visited.

Divine Grossman, writing in the American Journal of Nursing, describes the importance of assessing the “cultural factors that influence health and illness. As you interact with patients and families in their natural setting, identifying the cultural factors pertinent to a patient’s health can help you with one of the most important tasks: devising a successful approach to health issues that puts patient teaching points in a meaningful context ... what a patient believes about causation will determine the type of treatment he or she will seek or accept.”

- In the magico-religious health belief system, the person believes that health and illness are controlled by a god or gods, or supernatural forces. (For example Indian or Haitian health practices.)
- In the biomedical paradigm, to which the majority of Americans subscribe, illness is believed to be caused by a disruption in physical or biomedical processes that can be manipulated by humans.

- In the holistic paradigm, health results from a balance or harmony among the elements of nature; illness is produced by disharmony. (An example would be the Yin and Yang of Chinese philosophy.)¹⁷

In the same article, Grossman discusses linguistic codes, nonverbal cultural cues such as handshaking, patterns in values, authority and decision-making, cooking, religious beliefs and practices. Consider the practice in the West where symbols are read left to right. We often show periodontal disease in progressive stages in this manner. Grossman asks us to consider how an individual from the Middle East would view and interpret the same pictures when they read from right to left?

Socio-Economic

"In a Goteborg, Sweden, study, only two percent of 70 year-olds, four percent of 75 year-olds and nine percent of 79 year-olds have severe handicaps ... This is somewhat in contrast with reports from the USA where as many as 40 percent of the older population have been reported to have special needs based on complex health problems and functional status.

The proportion of older adults who are institutionalized is low. Most older adults live in their own homes and are mentally and physically capable of receiving information. When presenting dental health information, for example, barriers to care must be examined. The chief problem is that [seniors] perceived oral health status does not reflect the actual clinical situation."¹⁸

In one study, it was noted that "socio-economic factors play a significant role, it has been found that providing free or low-cost dental services ... does not necessarily enhance utilization. The most powerful predictors of utilization by elders are perceived need and dental attitudes."¹⁹

Locker²⁰ surveyed the oral health of 3,033 randomly selected older (50 years of age and older) adults living independently in four Ontario municipalities, two urban and two rural. They discovered that:

- almost 40 percent were living in households with incomes of \$20,000 or less.
- age and education factors (less education frequently meant less knowledge of oral care) impacted on the level of oral health, and thus on the subjects perception of their quality of life.

Of the 907 subjects who completed in-depth questions in the above-mentioned survey, 46.7 percent had dental insurance, 65.8 percent reported at least one dental visit in the previous year and 54 percent received regular care. Yet, despite reportedly high use of dental services, 30.5 percent reported that they were unable to eat some foods, 37.2 percent reported one or more pain symptoms, 36.8 percent reported some impact on eating or communication or social interaction.²⁰

"Present-day older people seem to be resigned to accepting their oral health condition and most believe that they will eventually lose their teeth."²¹ Dental hygienists and other health professionals need to be aware of the senior's perception of a problem prior to commencing any prophylactic or therapeutic therapy.

As a society, Canadians don't appear to value the elderly. "We don't give them a role in society and people need to feel helpful."²² Figures suggest that "approximately four percent of the population

over the age of 65 is a victim of some form of abuse or neglect each year, although accurate prevalence rates are difficult to obtain due to the sensitivity of the topic and the reluctance of people to report such abuse. Elder abuse affects a person's sense of identity, status and dignity and increases his or her risk of poor health outcomes."²³

Conclusion

Dental hygienists should re-examine their thinking about the oral care of an aging population. Are we empowering people to assume responsibility for their own oral health care according to their perceptions and needs? Do we value our seniors? Who has "ownership" of the task of ensuring the standards of care for the "dependent" elderly?

Dr. Michael Rachlis in addressing the Members of the Board of the Canadian Dental Hygienists Association in June 1994, stressed the importance of the dental hygienists' role as an agent for change in the provision of health care.²⁴ What more can we do individually or collectively to improve the health of our senior population? Dental hygienists may want to examine their own perceptions of what the term senior means, as it may very easily impact on the other options of the level of care offered to clients. A course on gerontology or "the changes in aging" (as compared to "geriatrics" which means "diseases of the aged") can be a helpful introduction to the force and potential of the older segment of our population.

In summary, seniors must be considered as uniquely and wonderfully different from other age groups with important individual strengths and concerns. The dental hygienist has a responsibility at each stage of the senior population, to adapt to their changing expectations.

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References

1. Ellen, R.P. (Ed.), *Periodontal Care for Older Adults*, 1992, Canadian Scholars Toronto, p.2
2. Foot, David K., *Boom Bust & Echo*, 1996, McFarlane Walter & Ross, Toronto, p. 10
3. *ibid* p. 17
4. *ibid* p. 102
5. Ministry of Revenue, *Province of Ontario Population Report*, 1991
6. Novak, Mark, *Aging and Society—A Canadian Perspective*, 1993, Nelson Canada, p. 13
7. *ibid* p. 123
8. Rachlis, Michael MD and Carol Kushner, *Strong Medicine*, 1994, Harper Collins Toronto, p. 94
9. *ibid* p. 15
10. Foot, p. 179
11. *ibid.*, p. 177
12. Rachlis, p. 126
13. Tamblin, Dr. Robin and Perreault, Dr. Robert, "Encouraging the wise use of prescription medication by older adults", *National Forum on Health*.
14. *ibid* p. 129
15. O'Brien Cousins, Sandra, "Promoting active living and healthy eating among older Canadians", *National Forum on Health*.
16. *ibid*.
17. Grossman, Divina, "Cultural Dimensions in Home Health Nursing" *American Journal of Nursing* 1996.
18. Ellen, p. 174
19. *The Oral Care Report*, Volume 6, Number 2, 1996, p. 9

The DH and the Senior Client (continued on page 100)

By Laurie Bennett,
Executive Director,
Hospice of Peel, Inc.

Hospice Care

This feature article is the second in a series of three articles on hospice/palliative care. The remaining feature discusses the role of the dental hygienist in hospice care.

Hospice of Peel is a community-based hospice serving a population of between 750–800,000. Hospice care evolved to meet the needs of the terminally ill. It can, and does, take many forms, as you will see in the brief case scenarios detailed below. The individuals and situations described are real and typical of day-to-day hospice care in a large urban environment. Both the sick and their families are in need of support and assistance to enable them to cope during this time of crisis in their lives. Increased awareness of hospice care is resulting in more and more people with a life-threatening or terminal illness and their families turning to hospice care.

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Imagine the terror you would feel, if for you, as for a number of our clients with a terminal illness, English or French is not your first language. Hospice volunteers can take the time to help you to better understand what's happening to you. They can drive you to and from medical appointments and treatment centres and keep you company while you wait for your appointment. Volunteers bring comfort and reassurance, and help eliminate the feeling of being alone in unfamiliar surroundings in which you don't understand either the system or much of the language.

Imagine not being able to express your fears and feelings easily in everyday exchanges, let alone when you are needing to say your last goodbyes. Staff and volunteers have the training and take the time to talk and listen, helping both patients and family members find the words to lessen their loneliness, frustration and fear.

Imagine living in a family where touching and hugging are rare, but, worse still, is withdrawn completely when those around you become unable to deal with your illness and dying. For example, the family of one of our older male clients had taken to physically avoiding him at a time in life when reaching out and touching is terribly important. As our volunteer saw no evidence that he was receiving any help with an unsightly dry skin condition, they offered to help by applying lotion to his skin.

Imagine being either alone—and you can be alone even surrounded by family—and having no one whom you feel is able to understand what you are going through. Volunteers have the skill to hear what you say, and what you don't say, and they have the commitment to empathize with each client's unique trials.

Imagine that your last wish is to remain at home, but either you have no family at home to care for you, or family members are unable or unwilling to give you the help and support you need. Hospice staff will do all they can to try to make that wish come true, by assembling the physical and human resources you need to support you as you live out your life.

Imagine being 75 years old and responsible for your terminally ill and depressed spouse who is in need of constant care. Volunteers

can come to your home and relieve you of some of your duties, giving you the time to do the shopping, attend an appointment, or just have a rest.

Imagine being a child in a family in which something is obviously seriously wrong with a parent or sibling, but no one will tell you what is going on. What is more, they signal by their tone and body language that you are not to ask. Hospice volunteers are trained to talk with families about sharing this event with children and can direct them to appropriate reading resources from the hospice library. Hospice staff can suggest the kinds of things to say to children of various ages. Supporting this openness about impending death with young family members can teach them how to deal with similar circumstances in the future, a lesson that remains useful long into adulthood.

Imagine being a woman whose husband's illness has already meant that you have had to become the sole breadwinner. But you are torn because you know that he has become so ill that he cannot be left alone and you can't afford paid help. In some cases hospice volunteers are able to fill the gap between other agencies' nursing and homemaking services and your off-work hours. This allows you to keep your job and enables your spouse to stay at home. Many of our clients and families are in financial distress because of their illness when we encounter them. They are immensely relieved and grateful that there is no cost to them for our service.

If you can imagine being any one of these individuals or one of their family members, you can begin to realize the breadth, depth, and value of hospice care to the general population.

Biography

Between 1976 and 1985 Laurie Bennett was the Palliative Care Social Worker, and subsequently Coordinator of the Palliative Care Service, at The Mississauga Hospital. In 1985, Laurie left the hospital to start the Hospice of Peel. She is its first and current Executive Director. Hospice of Peel was the third hospice to be founded in Ontario and is the second largest hospice in the province.

Status of Diagnostic Techniques to Detect Progressive Periodontitis

Probing

For routine management, probing depths can be used to monitor patients. Since a 1mm. probing error occurs frequently, therapists should look for at least a 2mm. change when assessing patients. If a pressure-sensitive probe is employed then the error can be reduced to 1mm. or less. But the use of these devices is costly and time-consuming. A less expensive solution is VIVACARE TPS® pressure sensitive probe which is a calibrated manual periodontal probe.

Clinical attachment levels are a more precise way to record disease progression because they use a fixed reference point such as the CEJ as opposed to the gingival margin which is not constant. However the approach is time consuming, difficult and may not be necessary in a clinical practice.

Microbial Test

Increased levels of certain pathogens, that is, Aa (*Actinobacillus actinomycetemcomitans*), Pg (*Porphyromonas gingivalis*) and Pi (*Prevotella intermedia*) are considered as risk factors and their reduction and elimination are desirable. However it is important to note that their presence cannot be reliably used to predict future breakdown. Some tests that can be used to test these microbes are:

1. Microbe Assays:

Phase contrast microscopy and dark field microscopy can assess mobility and variations of bacteria. However microscopic evaluation cannot differentiate pathogenic and non-pathogenic species and is generally not a useful modality to monitor bacteria.

2. Culturing:

This can provide data regarding resistance to antibiotics. Growing bacterial species directly can identify bacterial species as well as assess antibiotic susceptibility. However culturing is as difficult and expensive.

3. DNA Genetic Probes:

These apply gene analysis to detect and identify periodontal pathogens since difficult bacterial species have unique segments of DNA.

4. Immunologic Assays:

These assays rely on the reactions of certain antibodies to select antigens of the microorganisms. The presence in relative proportion of the target bacteria can be determined by immunofluorescence analysis.

5. Enzyme Assays:

The Periocheck™ enzyme activity kit measures levels of non-specific microbial protease. Filter paper strips samples

are placed on a test slide containing collagen substrate and blue dye. After incubation the strips are mounted and scored.

6. Genetic susceptibility:

PST™ is the only test to reveal a specific genetic marker that identifies individuals at high risk for severe periodontitis. In the dentist's office a sample of the individual's DNA is collected from a finger stick blood sample. The sample is then analyzed in a licensed genetic laboratory to determine if the individual is genotype-positive or genotype-negative. The evidence supports that genotype-positive individuals are bacterially challenged and that they are at least six times more likely to develop severe generalized periodontitis. Therefore they need to be managed more aggressively and more frequently to keep plaque levels under control.

The Bana (Benzoyl Arginine Naphthylamide) Test: The presence of specific enzymes unique to bacterial species can be used in diagnostic testing. Bana is a synthetic substrate for enzymes associated with certain bacterial species. The organisms of interest detected with this test are Pg, Bf (*Bacteriodes forsythus*) and Td (*Trepanema denticola*).

Host Response: Enzymatic assays have the potential to assess the disease process. At present these tests have very limited clinical usefulness.

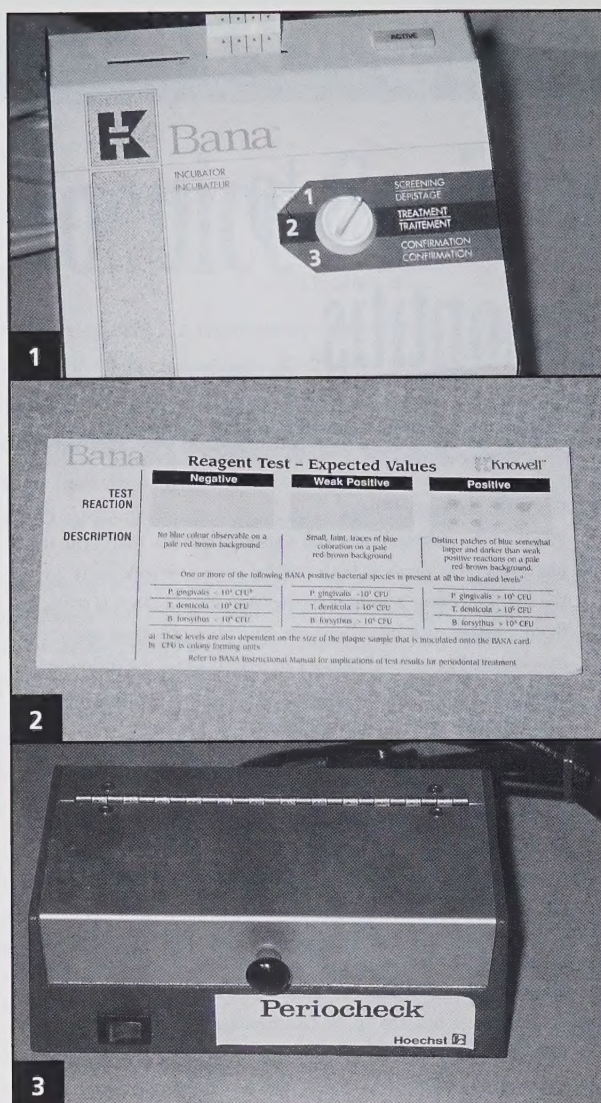
Physical Assessments

Temperature probes can detect temperature changes associated with inflammation. Recorded temperatures increase with increasing probing depths but may be poor predictors for future breakdown. The probe sensitivity declines in the posterior of the oral cavity and the test has limited clinical use.

Tooth mobility: The Periotest™ is designed to measure the damping content of the periodontal ligament. This device may help to monitor progressive tooth mobility but is not a good predictor of attachment loss. To date it is used more routinely to test implant stability.

Who Would Benefit From a Diagnostic Test?

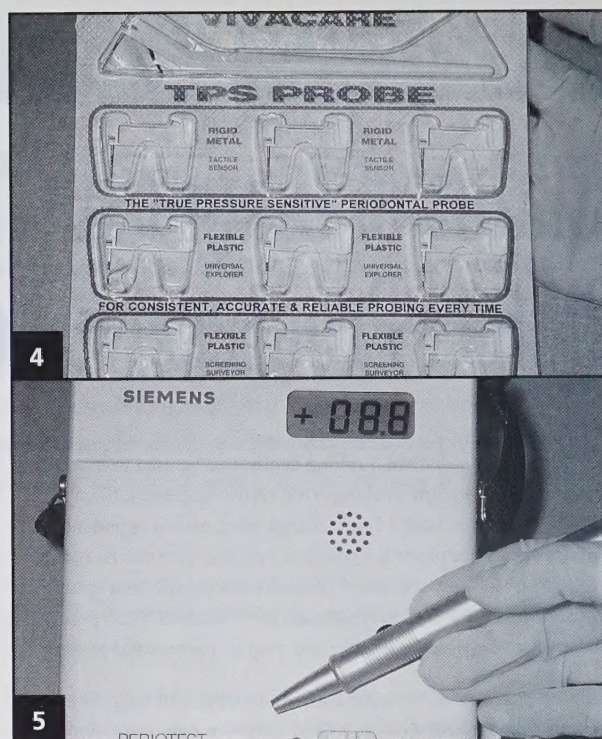
The presence of certain organisms associated with particular forms of periodontal disease suggest that a microbial test may be useful. One example is when there is testing required for Aa in a juvenile periodontal case. As a whole, periodontal disease has been treated very successfully without involving diagnostic testing. We must ask



ourselves whether or not we are going to do anything different because of the information obtained from these tests. In certain situations where the disease does not respond to conventional therapy, a diagnostic test (i.e. DNA Probe or Bana etc.) may identify a specific infection and therefore the appropriate antibiotic that should be prescribed. There are no tests commercially available that can discriminate between active and inactive sites. Therefore clinicians should eliminate all inflammation as a primary objective of periodontal disease treatment. While bleeding on probing is not a very sensitive test for predicting attachment loss, the absence of this sign is a highly specific test that guarantees periodontal health with high probability.

It is the author's opinion that in a clinical practice, progressive periodontitis can be detected and monitored through routine periodontal probing, bleeding measurement and the use of radiographs. When needed the in-office tests of value includes the Bana Test and out-of-office DNA Probes such as Omnigene™. These tests along with culturing are sufficient in identifying particular pathogens when required and determining susceptibility to antibiotic therapy.

Leanne Carlson-Mann is a graduate of the Wascana Institute of Applied Arts in dental hygiene and dental therapy. She received dental implant training at the University of Washington. As well as working full time for the past 15 years in a periodontal practice, Leanne lectures in the U.S.A. for 3i Implant Innovations. She is also an adjunct instructor at SIAST in Regina in the dental hygiene program. Leanne has published over twenty articles in national and international journals.



1. Bana Incubator™ 3. PerioCheck™ 5. PerioTest™
2. Bana Card™ 4. VIVACARE®
Periodontal Probe

References

1. Brown L.J., Oliver R.C., Loe H. Periodontal status of U.S. employed adults 1985-1986. *J Am Dent Assoc* 1990; 121:226-235.
2. Horning G.M., Hatch C.L., Lutskus J.L. The prevalence in a military treatment population. *J Am Dent Assoc* 1990; 121:616-622.
3. Greenstein G., Caton J. Periodontal disease activity: a critical assessment. *J Periodontol* 1990; 61:543-552.
4. Socransky S.S., Haffajee A.D., Goodson J.M., Lindhe J.. New concepts of destructive periodontal disease. *J Clin Periodontol* 1984; 11:21-32.
5. Jeffcoat M.K., Reddy M.S. Progression of probing attachment loss in adult Periodontitis. *J Periodontol* 1991; 62:185-189.
6. Gbirc J.T., Lamster I.B., Celenti R.S., Fine J.B. risk indicators for future clinical attachment loss in adult Periodontitis. Patient Variables. *J Periodontol* 1991; 62:322-329.
7. Deas D., Pasquali L., Yuan C.H., Kornman K.S. The relationship between probing attachment loss and computerized radiographic analysis in monitoring progressions of Periodontitis. *J Periodontol* 1991; 62:135-141.
8. Persson G.R., Page R.C.. Diagnostic characteristics of crevicular fluid aspartate aminotransferase (AST) levels associated with periodontal disease activity. *J Periodontol* 1992; 19:43-48.
9. Halazonetis T.D., Haffajee A.D., Socransky S.S. Relationship of clinical parameters to attachment loss in subsets of subjects with destructive periodontal disease. *J Clin Periodontol* 1989; 16:563-568.
10. Wennstrom J.L., Dahlen G., Svensson J., Nyman S. Actinobacillus actinomycetemcomitans, Bacteroides gingivalis and Bacteroides intermedius; predictors of attachment loss? *Oral Microbiol Immunol* 1987; 2:158-163.
11. Listgarten M., Slots J., Nowotny A.H., et al. Incidence of Periodontitis recurrence in treated patients with and without Actinobacillus actinomycetemcomitans, Prevotella intermedia and Porphyromonas gingivalis. A prospective study. *J Periodontol* 1991; 62:337-386.
12. Haffajee A.D., Socransky S.S., Goodson J.M. Subgingival temperature: I. Relation to baseline clinical parameters. *J Clin Periodontol* 1992; 19:409-416.
13. Haffajee A.D., Socransky S.S., Goodson J.M. Subgingival temperature: II. Relation to future periodontal attachment loss. *J Clin Periodontol* 1992; 19:409-416.

ARTICLE:

A Comparative Evaluation of the Percent Acceptable End-Rounded Bristles in the Crest Complete[®], Improved Crest Complete[®], and Oral-B Advantage[®] Toothbrushes

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Authors: P.A. Dellerman, B.S.; T.J. Hughes, B.S.; T.A. Burkett M.S. et. al.

Journal: *The Journal of Clinical Dentistry*, Vol. V No. 3

Studies support that nearly every American citizen possesses a toothbrush and more than 95 percent of the population brushes at least once daily. The literature suggests that traditional flat-bristled brushes remove only 50 percent of plaque. In order to improve on this statistic, manufacturers have explored various design modifications of the pattern and distribution of bristles.

Some studies have shown that the rippled bristle pattern, though it accesses interproximal surfaces better, traumatizes the gingival tissues. Poor bristle end-rounding is the suspected cause of the trauma.

The Procter and Gamble Company (P&G) has developed a new bristle end-rounding technique; the result is the rippled Crest Complete toothbrush. This study compared the newer design of P&G's Improved Crest Complete toothbrush with the original Crest Complete and Oral-B Advantage brushes. The three toothbrush types all feature a rippled profile with soft bristles and a trough, or concave depression along the long axis of the toothbrush bristle area. The Oral-B Advantage toothbrush includes "a circular sloped tuft group protruding at the tip".

The article discussed the traditional toothbrush fabrication technique of stapling bristles to the toothbrush head and then finishing them, and compared it to current methods in which the bristles are cut, polished and rounded first, and then placed in the brush head. The authors believe that this newer technique is superior as it increases bristle uniformity, with each bristle receiving identical rounding and polishing treatment.

Thirty toothbrushes of each brand were compared in this blind study in which bristles from varying tufts and toothbrush head locations were analyzed and calibrated by technicians, who performed microscopic observations of the bristle shape and conditions. Bristles were categorized from 1–10 based on their design and degree of "roundness". Bristles that were ragged, pointed, or with flat cylindrical finishes (categories 1–3 and 7–10) were considered unacceptable in rounding and bristle design. Only those categorized in groups 4–6 inclusive were deemed to have acceptable design features. These categories were illustrated by images of bristles with varying degrees of roundness and no jagged, sharp or uneven edges/surfaces. The article featured several scanning electron microscopic (S.E.M.) images of the varying types and design of bristle.

The results of this study indicate that the Improved Crest Complete toothbrush shows an average of approximately 95 percent of "acceptably rounded" bristles, the Original Crest Complete toothbrush an average of 85 percent, and the Oral-B Advantage with an average of 17 percent.

According to this paper, Crest Complete bristles were found to be superior (previous studies are cited here) in bristle end-rounding, to Oral-B, Reach Between, Butler G.U.M. and Colgate Precision, among others. The article concludes with research citations comparing various makes of toothbrush, and determining that the newer manufacturing process of rounding bristle ends produces a "consistently high level of end-rounding relative to competitive products" and that the Crest toothbrushes examined in this study "provide improved plaque removal possible with a ripple design brush, without the potential danger of soft tissue trauma".

ARTICLE:

Clinical Significance of Bacterial Resistance to Tetracyclines in the Treatment of Periodontal Diseases

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Author: Gary Greenstein

Journal: *Journal of Periodontology*, November 1995

Tetracyclines are broad spectrum antibiotics used in both medical and dental treatments of clinical infections. They inhibit the growth of some Gram-positive and many Gram-negative bacteria, as well as other microorganisms, without destroying them. Some clients who don't respond to conservative periodontal therapies are given tetracyclines as an adjunct treatment. This article describes how it is used and how it works as an antimicrobial agent in the treatment of periodontal diseases. The article also discusses the problem of increasing bacterial resistance to antibiotics in general, and addresses the concern that the indiscriminate use of this group of antibiotics for dental treatment may contribute to the development of tetracycline-resistant microorganisms, thus reducing the effectiveness of tetracyclines.

Tetracycline exerts its antimicrobial effect by inhibiting protein synthesis in certain cells. Studies cited in the text maintain that systemic or subgingivally delivered tetracycline, when used as a supportive treatment in combination with scaling and root planing, does not provide a superior improvement in periodontal health for clients with adult periodontitis. However, improved clinical results were shown for those clients suffering from Juvenile or Refractory (or recurrent) Periodontitis when the drug was administered through systemic or slow-release delivery systems such as tetracycline impregnated fibres.

Although tetracycline is widely used for the treatment of periodontitis, the author cautions that other antibiotics have also proved useful in periodontal disease therapy (e.g. metronidazole, amoxicillin/clavulanate potassium), and that some patients continue to deteriorate even when given tetracycline as an adjunct.

The article then provides a wide literature review covering issues such as: developing resistance to tetracyclines after local use; short-term/long-term use; the impact of prior systemic therapy with tetracycline; and developing resistance versus the selection of resistant strains.



The use of antibiotic *combinations* as a regimen against serious infection may be more effective for three reasons: production of drug synergism; reduction of adverse effects; and, prevention of the emergence of resistant microorganisms. Furthermore it is suggested that the combination of systemic doxycycline with metronidazole and amoxicillin/clavulanate potassium provides a broader antibacterial effect. Research supports that this combination improves periodontal health, and is more effective than doxycycline alone.

The article advises clinicians that approximately 12 percent of the cultivatable subgingival microflora in clients with adult periodontitis are tetracycline-resistant. Resistance can increase over time or after tetracycline treatment. It is important to recognize this effect as infections associated with resistant bacteria may be correlated with prolonged illnesses and therefore prolonged therapy and increased expense due to the lack of treatment success. Finally, of course, clients who have developed a resistance to tetracyclines have a higher risk of dying from illnesses for which tetracyclines are a treatment.

The author concludes that the development of resistant bacterial strains are a natural consequence of therapeutic use. He closes on a note of caution, with the reminder that the "rate at which resistance

This case study was inspired by a second-year dental hygiene student at Dalhousie University, Halifax.

Dilemma

Rebecca found herself facing an ethical situation about six months after she started working for “Dr. S.”. She noticed that when clients came in for their recall appointments with her, all the units of scaling she had recorded on their dental charts had been changed. She saw that Dr. S. always changed the number of units to a higher number after she had completed the chart. Rebecca was quite concerned about this because she knew it was unethical. She mentioned it casually to Dr. S. a few times, but it went on happening, so Rebecca decided to speak to the office manager about it. After the office manager spoke to Dr. S., the overcharging finally stopped. However, a few weeks later, Rebecca’s pay schedule was changed from an hourly wage to a commission basis.

Gather the Facts

REBECCA, DENTAL HYGIENIST:

- Rebecca always records the exact units of scaling that were completed;
- Dr. S. changed Rebecca’s recorded units of scaling to make sure all clients were charged at least three units;
- Assume that none of the clients knew that they were being overcharged;
- Rebecca attempted to get Dr. S. to stop changing her recordings but failed;
- Rebecca spoke to the office manager;
- Dr. S. stops the unethical practice;
- Dr. S. puts Rebecca on commission.

Identify The Relevant Principles (from the CDHA Code of Ethics)

PRINCIPLE 1: RESPECT FOR PERSONS

Recognizes all human beings as possessing unconditional intrinsic value and having a capacity for rational choice.

Rebecca’s decision to enforce the change in Dr. S.’ overcharging practice without informing her clients, diminishes the respect due to her clients, who have both a right to know they have been defrauded, and the capacity to rationally decide whether they wish to continue obtaining their services from Dr. S. under the circumstances.

PRINCIPLE 3: VERACITY AND INFORMED CONSENT

Based upon informed respect for clients regard for their right to control their own care, dental hygienists must respect the right of choice held by clients.

This principle is about honesty, through which professionals and their clients achieve meaningful communication. In this case, Dr. S. was, quite simply, dishonest. He has not only overstepped the bounds of his moral obligation to provide informed care (informing the clients honestly about their state of dental health and the optional treatments they may pursue), he has acted illegally in misinforming his clients about the state of their dental health (the amount of scaling performed), and in requesting and obtaining payment for work which was not performed.

PRINCIPLE 4: BENEFICENCE AND QUALITY ASSURANCE

The dental hygienist is obligated to provide competent care (doing of good) as currently described in the clinical practice standards for Canadian dental hygienists.

Beneficence is the act of doing ethically good things for people as well as the promotion of kindness and charity. Dr. S. was not respecting the principle of beneficence by intentionally overcharging his clients, as it is neither beneficial, nor charitable, to charge clients for work which is not done. Specifically, Rebecca has a responsibility under Section 4(c) of the Code, to re-evaluate the conditions of her employment, perhaps by bringing both *Code of Ethics* and the *Practice Standards* to her employer’s attention.

PRINCIPLE 5: JUSTICE

The dental hygienist, as a member of the dental profession, is obligated to take steps to ensure that the client receives competent medical care.

Clients are treated justly when they receive professional service from all members of the dental team. As a client may not be in a position to know or understand that the level of service they are receiving may be inadequate, any member of the dental team who suspects a colleague of incompetence or wrong-doing is duty-bound to seek justice on behalf of the client. Item 5(b)iii of the *Code of Ethics* clearly identifies a course of action for Rebecca, that of reporting Dr. S. to his licensing authority. She should have no fear or her job because of the moral obligation (Standard 5(b)iv) of all dental health professionals and organizations to “support dental hygienists who fulfil their ethical obligations under the Code”.

Explore the Options

a) Rebecca could have started looking for a new job while documenting her actual work and recording Dr. S.' modifications to her files. When she found alternative employment she could have provided due notice and informed her employer that she would be taking action on his unethical behaviour. She could have presented her files to the appropriate dental association for their review. Under these circumstances Rebecca would have to be careful not to discuss the subject with anyone outside the appropriate association until the case has been reviewed by Dr. S.' peers, and judgement determined.

PROS:

Dr. S.' behaviour is put under peer review. If the evidence proves unethical behaviour, the association would have the authority to enforce appropriate action to reimburse existing and protect future clients. Clients are not unduly distressed by rumour. The integrity of the profession is maintained. Rebecca still has a job, albeit with a new practice.

CONS:

Depending on the action taken if Dr. S. was found to be acting unethically, the truth about Dr. S. may never trickle down to his existing clients. Clients may not get compensation as the task of estimating compensation to existing clients for overcharged fees would be complex to administer and may not even be attempted.

b) Rebecca could do nothing more than she has presently done.

PROS:

Rebecca still has a job, and has accomplished something for the time-being in preventing the continued overcharging. Rebecca has started a dialogue about ethics within the practice which it is hoped would continue. Clients would no longer be overcharged. Rebecca is more comfortable knowing that this unethical behaviour no longer occurs. Some clients may think that their dental fees have decreased.

CONS:

Dr. S. would not be held accountable for his improper conduct. Rebecca may get fired (though this would be illegal) or be more subtly threatened by the imposition of a changing fee schedule, as actually happened. Rebecca could potentially lose money. Clients still do not know the truth about the overcharging of fees. There is no evidence to suggest that Dr. S. would maintain his ethical billing practices if either Rebecca or his office manager (who both "know the truth") ever left his employment. The evidence of human experience also suggests that had not two employees both spoken to Dr. S., he may instead have used intimidation to silence a single, less powerful, employee. Rebecca has no evidence that it would not happen again, either in Rebecca's area of expertise or in another employee's area of expertise.

c) Rebecca could try to force Dr. S. to reimburse clients for the overcharged fees.

PROS:

Clients are reimbursed, told the truth and are no longer overcharged. The obligation of veracity is satisfied. Rebecca is satisfied because proper redress has been made.

CONS:

Dr. S. would not be held accountable by his peers for his improper conduct. Rebecca may get fired (though this would be illegal). The practice may go bankrupt as clients seek a new dentist once they hear about Dr. S.' dishonesty. Therefore this admission of dishonesty both inconveniences clients and may well lose Rebecca her job anyway. There is the risk that the broadcasting of this single act of dishonesty could damage the name of profession in general, and cause other dentists' professionalism to be questioned.

d) Rebecca could find a new job.

PROS:

Rebecca does not have to deal with the on-going situation. Rebecca has a new job.

CONS:

Dr. S. would not be held accountable for his improper conduct. Clients may once again begin to be overcharged when Rebecca leaves. Rebecca may herself be acting unethically since she has not reported the ethical abuse to the appropriate licensing authority (though she could argue that it had been remedied in the practice situation). Rebecca would still have the issue on her conscience and may put her replacement in a similar dilemma to the one she has just escaped. Rebecca has an unwritten, but nevertheless important, duty of care to the office manager who Rebecca was responsible for bringing into the situation in the first place. Left alone, the office manager may herself become the object of Dr. S.' intimidation, as she knows of the past unethical behaviour.

Choose an Option

I believe the first option would satisfy the highest principles of veracity, justice and beneficence while showing the greatest respect for exiting and future client's continued welfare.

The second option, the one Rebecca chose, though a simpler and more pragmatic approach leaves several issues unresolved. Though everyone's immediate needs are met, and Dr. S. is encouraged to act in a more ethical manner, the clients never know what has happened. This shows a disrespect for persons under Principle 1 of the Code. They are not told the truth, nor are they provided with all the evidence they need to make a rational choice on who their dentist should be.

Option c) may well be impractical, or worse, illegal. It is not clear what power Rebecca would have to "force" Dr. S. to do anything. The power may lie in the threat to "tell all" to the Dental Association, but this action may be, ethically speaking, not only justifiable, but actually required. If Rebecca is unwise enough to discuss this practice with others, she may risk being sued for slander.

Option d) is a cop-out, ethically, professionally and morally. It takes no real account of Dr. S.' conduct, professional ethics, or client and co-worker well-being.

National Forum on Health Final Report: News Release

The National Forum on Health was launched by the Prime Minister in October 1994, to involve and inform Canadians and to return with advice for the federal government on ways to improve the health system and the health of Canada's people. The Forum's 24 members were appointed for their knowledge of the health system as professionals, consumers and volunteers. The Forum was chaired by the Prime Minister, with the Minister of Health, the Honourable David Dingwall, as Vice Chair.

The Final Report, entitled *Canada Health Action: Building on the Legacy* was released in Ottawa on February 4, 1997. The report states that medicare can be preserved if changes are made to the way the system is funded and structured—especially in the areas of primary care, home care and medically necessary drugs. Recommendations include restructuring the organization, funding and delivery of primary care services; funding the care, rather than the provider or site; and taking steps to bring home care and medically necessary drugs under the umbrella of the publicly funded health care system.

At a broader level, the Forum proposes new ways of investing society's resources to improve the health prospects of Canadians, by creating favourable conditions in the social and economic

environment. Recommendations include a broad, integrated child and family strategy involving both programs and income support; the creation of a national foundation to strengthen community action; an Aboriginal Health Institute; and help for people trying to enter the work force.

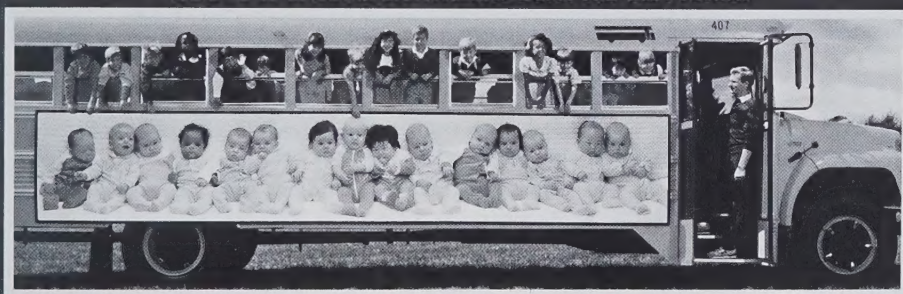
To pursue an orderly transformation in the health care system, and to increase accountability and effectiveness, the Forum recommends the adoption of an evidence-based system at the clinical, management and policy levels, and at the public information level. It calls for federal leadership in this area through the development of a nationwide population health information system. Most of the Forum's recommendations call for collaboration and partnerships between governments and other sectors.

The Final Report is supported by a companion volume of four synthesis papers and single-issue papers on women's health, on an Aboriginal Health Institute and on pharmaceuticals. For further information, contact Lise Corbett, Forum Secretariat, (613) 957-3268. To obtain a copy of the Final Report contact Lynn Westaff, Forum Secretariat, (613) 941-1584.

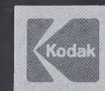
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"No Cavities" Wall Poster Available Free From Kodak

OFF TO SCHOOL...and still no cavities.



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Eastman Kodak Company's Dental Business has updated its wall poster featuring 15 cavity-free children. The full-colour, 16 1/2 inch by 42 inch poster carries the tag line: *OFF TO SCHOOL...and still*

no cavities. The poster reinforces the message that preventive oral care is so important for young people. Originally produced by Kodak Canada, the poster has been printed in the United States.

Statistics Canada—Canadian Social Trends

Selected Findings of the National Longitudinal Survey of Children and Youth

The new National Longitudinal Survey of Children and Youth (NLSCY) will follow the same children over many years, collecting data that will help researchers better understand the factors that influence children's life outcomes. As the NLSCY is conducted over successive years, the data will provide a "video" that details factors influencing child outcomes over time.

The first year of data available provides a "snapshot" of children's environments in 1994. Selected findings from the NLSCY are adapted from the Statistics Canada report *Growing Up in Canada*.

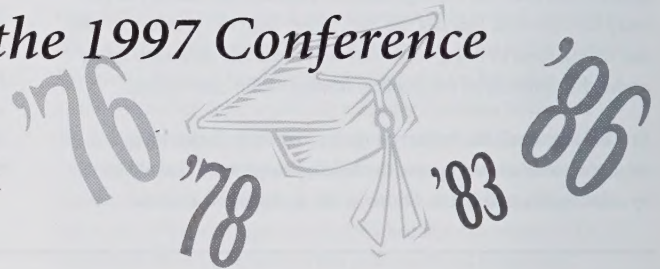
- Most children under age 12 lived in two-parent families with both their biological parents.

- One in four children under age 12 lived in low-income families.
- Many children under the age of 2 had mothers who engaged in risk behaviours (smoking, alcohol consumption, use of over-the-counter drugs and prescription drugs) while pregnant.
- Children from lone-mother families were more likely to have problems than other children.
- Low income and lone-mother status are both important risk indicators for childhood problems.
- The majority of children in stepfamilies lived in blended families.

100

Class Reunions During the 1997 Conference

The organizing committee of the CDHA's 8th annual professional conference in Ottawa, June 27-29 would like to see their classmates. Algonquin graduates from May 1976 and Dec. 1976, 1978, 1983 and 1986 (and any Dalhousie graduates) meet at the President's reception on June 27, 6:30 p.m.



LETTER TO THE EDITOR

(Received March 10, 1997)

Dear Probe Editor:

As a dental hygienist practising in British Columbia, I am working independently serving the elderly population in long term care facilities. During the process of establishing my new practice I had a negative experience which might be of interest to my colleagues.

After setting up billing accounts with numerous dental companies I attempted to order supplies and set up an account with Patterson Dental/Dentaire Canada Inc. I was informed by their accounting

department that dental hygienists were not able to set up accounts with them, and that

I could only order supplies C.O.D. In dismay, I wrote to the President of Patterson Dental in January, 1997 regarding this discriminatory policy and to date have not received a response.

I thought that dental hygienists across Canada and the Canadian Dental Hygienists Association would want to be apprised of this non-supportive stance held by Patterson Dental.

Respectfully,

Linda Martens, Dip.D.H., B.Ed., P.I.D.

THE DENTAL HYGIENIST AND THE SENIOR CLIENT (continued from page 91)

20. Locker, David: "The burden of oral disorders in a population of older adults", *Community Dental Health* (1992) 9, 109-124

21. Ellen, p. 176

22. "Understanding the Golden Years: The Connections between retirement and health", *InfoForum* Issue Number 4

23. Nahmiash, Daphne, "Preventing, Reducing and Stopping the abuse and neglect of older adults in Canadian communities", *Forum on Health and Welfare Canada*.

24. Rachlis, M., "The Role of Dental Hygienists in the Challenge of Health Care Reform", *Probe* Volume 28, Number 6, p. 228

CONTINUING EDUCATION CALENDAR

MAY

May 29–June 1

1997 ALBERTA DENTAL
HYGIENISTS' ASSOCIATION
ANNUAL PROFESSIONAL
CONFERENCE

Jasper, AB.....(403) 465-1756

31 ORTHO CLINIC II:
PHASES OF TREATMENT

Dr. D. Price

*Continuing Dental Hygiene Education,
George Brown College of
Applied Arts & Technology
Toronto, ON.....(416) 415-4543*

JUNE

14, 15

ORTHODONTIC PROCEDURES

*Continuing Dental Hygiene Education,
George Brown College of
Applied Arts & Technology
Toronto, ON.....(416) 415-4543*

JUNE

June 19

THE TREATMENT OF
THE GERIATRIC PATIENT

Dr. I. Kuc

*Northern Alberta Dental Hygienists'
Society.....(403) 465-1756*

27–29 THE CDHA 8th ANNUAL
PROFESSIONAL CONFERENCE

"Dental Hygienists:

CDHA Professionals from Coast to Coast"
ACHD Ottawa, Ontario

JULY/AUGUST

July 21–August 1

DENTAL HYGIENE REFRESHER
CONTINUING DENTAL HYGIENE
EDUCATION

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Toronto, ON.....(416) 415-4543*

101

CDHA 8th ANNUAL CONFERENCE
WESTIN HOTEL • OTTAWA, ONTARIO

DENTAL HYGIENISTS:
PROFESSIONALS
COAST TO COAST



JUNE 27–29, 1997

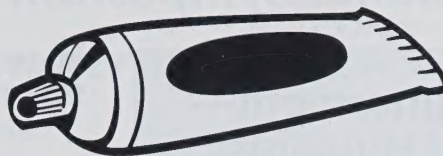
SELF-ASSESSMENT TEST

*Prepared by: Harriet McCabe, Dip.D.H., B.Sc.D.(D.H.) Candidate (Faculty Member,
Dental Hygiene Program, George Brown College of Applied Arts and Technology, Toronto, Ontario)*

Dental Hygiene Care: Prevention

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1. Pyrophosphate is best known and clinically tested as a(n):
 - a) plaque inhibitor
 - b) calculus inhibitor
 - c) agent fighting refractory periodontal disease
 - d) breath enhancer
 2. Which of the following products is known to alter taste sensations, increase calculus formation and stain teeth?
 - a) Viadent
 - b) Plax
 - c) Peridex
 - d) Listerine
 3. The active ingredient found in Viadent is:
 - a) sanguinaria extract
 - b) hydrogen peroxide
 - c) pyrophosphate
 - d) chlorhexidine
 4. A combination of essential oils (thymol, eucalyptol, menthol and methyl salicylate) are commonly found in:
 - a) Plax
 - b) Listerine
 - c) Viadent
 - d) Peridex
 5. The best prevention for root caries in old age is:
 - a) the prevention of periodontal disease in middle age or younger
 - b) efficient removal of supragingival plaque
 - c) the frequent application of professionally applied fluorides in middle age
 - d) a carbohydrate reduced diet
 6. In order to achieve long-lasting learning when providing oral self-care chairside education
 - a) the client must be intrinsically motivated
 - b) the dental hygienist must persuade the client
 - c) the client must be extrinsically motivated
 - d) the dental hygienist must motivate the client
 7. Which one of the following statements is false?
 - a) sealants bond directly to the teeth
 - b) sealant retention is affected by having a dry working environment
 - c) as the potential for caries increases so does the potential for sealant retention
 - d) present day sealants are hydrophobic
 8. The rate of progression of dental caries in young and middle-aged adults is frequently much slower than in children because:
 - a) they have more efficient oral self-care practices and fewer between-meal snacks
 - b) the make-up of their saliva is different and the saliva flow rate changes
 - c) all body processes slow down as we age
 - d) many of their teeth are filled with amalgam and/or resin
 9. The delivery of professionally applied fluorides on a regular basis by the dental hygienist in dental offices should be determined by:
 - a) the established office protocol which already exists
 - b) the conditions and needs presented by each client
 - c) the type and scope of dental insurance available to the client
 - d) the child, while attending her/his appointment
 10. With regard to the client's personalized home care, the hygienist must ensure:
 - a) that every client is taught to brush and floss
 - b) that the client is covered for oral self-care instruction in their insurance plan
 - c) that each client receives individualized attention concerning their needs
 - d) that all family members are counselled together to ensure consistency
- Self Assessment Test...(continued next page)*



11. Topical fluoride applications should:
- a) be provided as close to the eruption of new teeth as possible
 - b) be applied to all children's teeth every six months
 - c) only follow a thorough rubber cup polish
 - d) be provided before sealants are placed during the same office visit

12. Which list best describes characteristics of the elderly which put them at higher risk for root caries?

- a) reduced saliva flow, good oral self-care, a diet high in fibre content
- b) poor vision, low interest in level of oral health, reasonable food intake
- c) a diet high in fermentable carbohydrates, diminishing manual dexterity, decreased effectiveness of oral self-care

13. In caries, the incipient lesion is _____.
In periodontal disease, the incipient lesion is _____.

- a) dark spot/pocket
- b) white spot/pocket
- c) plaque accumulation/bone loss
- d) pit and fissure lesion/recession

14. Name the dentifrice ingredient(s) which have significant caries-preventive value: (i) detergents; (ii) humectants; (iii) fluorides; (iv) abrasives

- a) i and iii
- b) iii only
- c) ii and iii
- d) i only

15. Which one of the following toothbrushing techniques allows for subgingival access and cleansing?

- a) Modified Stillman
- b) Bass
- c) Leonard
- d) Charters

16. Which of the following dentifrices is most abrasive?

- a) Colgate
- b) Aim
- c) Colgate Tartar Control
- d) Crest Tartar Control

17. Which of the following sweetening agents has recently been added to dentifrices and has been shown (when added to chewing gums and foods) to be noncariogenic?

- a) xylitol
- b) mannitol
- c) sorbitol
- d) cyclamate

18. *Mentadent* dentifrice delivers a combination of:

- a) hydrogen peroxide, baking soda and fluoride
- b) fluoride, triclosan and disodium dihydrogen pyrophosphate
- c) baking soda, fluoride and pyrophosphate
- d) cyclamate, fluoride and peroxide

19. The mouthrinse first recognized as an over-the-counter (OTC) antiplaque and antigingivitis product is:

- a) Cepacol
- b) Scope
- c) Listerine
- d) Plax

References

1. Harris, N. O. and Christen, A. G. *Primary Preventive Dentistry* (4th edition), Appleton and Lange Publishing, 1995.
2. *Journal of the American Dental Association*, Vol. 125, August, 1994.

Harriet McCabe graduated from the University of Toronto, dental hygiene program in 1971. She has been an instructor in the dental hygiene program at George Brown College since 1976. Her primary responsibilities include teaching the theoretical aspects of the Dental Hygiene Process of Care, Principles of Practice, and Advanced Preventive Dentistry. Harriet is presently completing a B.Sc.D.(D.H.) degree at the Faculty of Dentistry, University of Toronto.

Answer Key: 1. b, 2. c, 3. a, 4. b, 5. a, 6. a, 7. a, 8. a, 9. b, 10. c, 11. a, 12. c, 13. b, 14. b, 15. b, 16. d, 17. a, 18. a, 19. c

14th International Symposium on Dental Hygiene

First Announcement— The Dental Hygienist: A Needed Reality

July 2–4, 1998

Palazzo dei Congressi—FLORENCE, ITALY
UNDER THE AUSPICES OF: IFDH
International Federation of Dental Hygienists
SPONSORED BY: AIDI
Italian Dental Hygienists Association

All presentations in English

MAIN TOPICS OF THE SCIENTIFIC PROGRAM:

- Dental hygiene diagnosis, treatment planning in the quality of care
- The reality of the dental hygienist in public health
- The dental hygienist's contribution in the treatment of patients with special needs
- Free topics

For further information on the Symposium, or if you would like to submit an abstract for an oral paper, poster, video, or table clinic presentation please contact:

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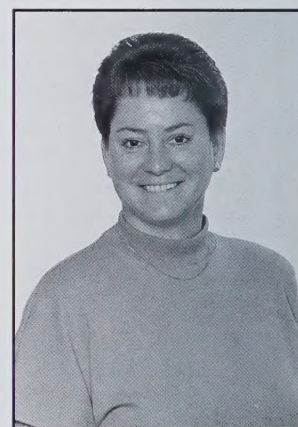


Dental Hygienist Appointed to Long Term Care Planning Committee

Patricia Martin, Dip.D.H., of Midland, Ontario has been appointed to the Long Term Care Planning Committee of the Simcoe County District Health Council for a three year term, by the order of the Lieutenant Governor of Ontario. Her appointment to this committee arose from her interest in establishing a mobile dental hygiene service to meet the needs of the homebound in her area.

There are 33 District Health Councils in Ontario. The Long Term Care Committees of these Councils are responsible for advising the Minister of Health on the planning and development of their local health systems. The membership of these committees is comprised of a balance between consumers and their caregivers, volunteers within the system, and providers of services. Committee members are expected to be informed on the Long Term Care service system,

Ministry policy, the linkages between the Long Term care and other service systems, and local facts and issues. A part of Patricia's participation on this committee has been to raise the issue of transporting clients to the dental office and to bring forth the idea of mobile dental hygiene services.



Patricia Martin, Dip.D.H.

Patricia encourages other dental hygienists to consider becoming involved on local health care committees.

Child Care Available at the 8th Annual Conference

Is your family coming with you to the Conference? Limited private child care services are available for a fee. For further information contact CDHA Central Office at 1-800-267-5235.



Dentsply/CDHA Partners in Education Series



DENTSPLY

At the Calgary CDHA Convention DENTSPLY and the CDHA announced a new joint venture in the area of continuing dental hygiene education. Under the sponsorship of DENTSPLY Canada education courses were hosted across the country. This has been a very exciting project and one that has generated a significant amount of positive response. There are three courses available to the CDHA Membership—"The Periodontium" presented by Marilyn Goulding, "Ultrasonics Revisited" presented by Jenny Thomas and "Clinical Application of Ultrasonic Therapy in Today's Dental Hygiene Practise" presented by Nancy Keselyak.

"The Periodontium" is a full day lecture presented by Marilyn Goulding. Through a career covering nearly twenty years in clinical practice, dental research and education, Marilyn has developed an impressive repertoire of expertise. She is currently completing her Masters of Oral Sciences at SUNY at Buffalo. Her extensive chairside experience working in general and periodontal practise complements her education background. Recently, Marilyn was honoured by her peers and received the Canadian Dental Hygienists' Association Award for Distinguished Service. "The Periodontium" is an exciting course that exposes the participants to the recent information surrounding the treatment and repair of the periodontium.

"Ultrasonics Revisited" is a half day hands-on workshop presented by Jenny Thomas. Jenny is currently a consultant to dental offices across North America. She has utilized her chairside experience as a dental hygienist to develop a practical program that provides the participants with the opportunity to use the latest in ultrasonic technology. "Ultrasonics Revisited" covers the trends in periodontal treatment, the link between record taking and the changes in modern dental hygiene practice, recent developments in power driven instrumentation and the technique for utilizing the new FSI Slimline Inserts

for the Cavitron Ultrasonic Scaler. This is a great opportunity for clinicians to evaluate the latest products from DENTSPLY's Cavitron Line of products.

"Clinical Application of Ultrasonic Therapy in Today's Dental Hygiene Practice" is a half day hands-on workshop presented by Nancy Keselyak. Nancy is currently the curriculum writer and coordinator for several dental hygiene study groups in BC's Lower Mainland. She is actively involved in developing and presenting continuing dental hygiene education workshops and seminars, she provides clinical tutoring for groups and individuals and is a clinical instructor in the Faculty of Dentistry at the University of British Columbia. Her program offers the participant information on the rationale for renewed interest in ultrasonic therapy. This course describes the mechanics of ultrasonic devices, examines and compares the principles of instrumentation used in ultrasonic therapy, as well as those used in hand instrumentation and demonstrates the use of ultrasonic tip design in relation to anatomical features of various teeth.

In 1996, DENTSPLY Canada and CDHA hosted over 10 programs across Canada with a total attendance of over 300 dental professionals. During 1997, DENTSPLY Canada and the CDHA will continue to support continuing dental hygiene education. The programs described above will again be offered across the country. DENTSPLY Canada is developing new courses that will be made available in the future. You are encouraged to get in touch with CDHA or with DENTSPLY Canada to learn more about the courses being offered. You can contact Danielle Zucchet of DENTSPLY Canada at 1-800-253-1437 Ext. 222 for more information. Don't miss the opportunity of attending these dynamic programs that will provide you with practical information that you can apply in day-to-day practice.

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University of Manitoba Dental Hygiene Students Launch Website

Mary Ann Klippenstein, Marie Jaworski, Francesca Anania, and Robin Chambers (graduating class of 1997) are pleased to announce the official launch of *The Wisdom Tooth Homepage*.

The website was created as a school project to promote oral health and the role of the dental hygiene practitioner in communities around the world.



The website is written for the general public and contains a wide variety of oral health information such as:

- What is a Dental Hygienist?
- Brushing and Flossing Aids
- Tips for Parents on Good Oral Hygiene

The website will allow the students to interact with the public and address oral health concerns via e-mail.

The students invite all CDHA members with internet access to visit the homepage at <http://www.umanitoba.ca/outreach/wisdomtooth>

Your comments and suggestions would be greatly appreciated.

1996 CDHA/Colgate Community Health Grant Recipient

Congratulations are extended to Vicky Garland, Dip.D.H. (Amherst, Nova Scotia), as the 1996 recipient of the CDHA/Colgate Community Health Grant. Vicky has purchased a mobile dental unit for use in providing dental hygiene services, on-site, for residents of a special care facility in Amherst. Gables Lodge Limited is a 95 bed Level II Special Care Facility providing long term, palliative, and respite care services to adult clients, ranging from 34 to 90 years of age. Vicky recognized the need for the residents of Gables to be provided with oral care on-site and sought permission from the Provincial Dental Board of Nova Scotia to deliver dental hygiene services without direct supervision. Permission was granted—Vicky provides services upon the verbal or written instruction of a dentist. Residents of the facility have been very receptive to the dental hygiene care which Vicky offers.

The community health grant was established to support Canadian dental hygienists engaged in community health projects that promote oral health and wellness. A grant of \$3,000 is awarded annually to a Canadian dental hygienist who presents a new community health initiative that is not associated with any other dental health delivery program. Preference in selection is given to community projects that are relevant to the discipline of dental hygiene and the mission and objectives of the CDHA.



Vicky Garland stands with mobile dental unit purchased with her CDHA/Colgate Community Health Grant.



Vicky Garland providing dental hygiene services to an adult resident of the Gables Lodge, Amherst, Nova Scotia.

CDHA'S 8th ANNUAL PROFESSIONAL CONFERENCE



JUNE 27-29, 1997

THE WESTIN HOTEL, OTTAWA

HOSTED BY THE OTTAWA
DENTAL HYGIENISTS' SOCIETY



ON-SITE REGISTRATION (SECOND LEVEL)

Pre-registered conference delegates are reminded to arrive early to pick up their name badges and delegate portfolios at the Registration Area during the following hours:

Thursday, June 26 (6:00 p.m.-8:00 p.m.)

Friday, June 27 (7:00 a.m.-1:00 p.m.)

Saturday, June 28 (7:00 a.m.-10:00 a.m.)

Sunday, June 29 (7:00 a.m.-9:00 a.m.)

CDHA ANNUAL AWARDS LUNCHEON

Held in conjunction with CDHA Annual Conference, this event is an opportunity for the Association to recognize and pay tribute to numerous volunteers and individuals who support the dental hygiene profession. Among the presentations to be awarded this year:

CDHA Student Hygienist Scholarship

CDHA Life Membership

CDHA Graduate Student Research Award

CDHA Dental Hygiene Research Grant

CDHA/Colgate Community Health Grant

CDHA Endowment Fund Grant



CDHA'S 8th ANNUAL PROFESSIONAL CONFERENCE

COMMERCIAL EXHIBITORS

Conference delegates are encouraged to support our exhibitors.

Commercial exhibits will be held Saturday, June 28th from 10:00 a.m.–3:00 p.m. in the Exhibit Hall.

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Ash Temple Ltd.	Germiphene Corporation	Pacific Mobile Dental Equipment
Biotene Canada	Glide® Products by Gore	Premier Dental Canada
Div. of Bolton Dental Mfg., Inc.	Henry Schein	Pro Dentec Canada
Block Drug Company (Canada) Ltd.	Hoechst Marion Roussel Canada	SciCan
Canadian Dental Supply Ltd.	Hu-Friedy Manufacturing	Septodont of Canada Inc./Novocol
Canadian Sugar Institute	Interplak	Sulcabrush Inc.
Cetylite Industries, Inc.	John O. Butler Company	Teledyne Water Pik Canada
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Cerum Dental Supplies	Fidelity Investments Canada	Sun Life of Canada
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	Oasis Dental Group	Warner Lambert—Consumer Healthcare



June
15-22
1997

What's On When You're in Town

Ottawa and Canada's Capital Region

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Ottawa Lynx — June 12-19, 1997

Jetform Park
AAA baseball
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Festival Canada — June 18-July 19, 1997

National Arts Centre and other venues
The return of the National Arts Centre's summer festival features more than 50 vocal music performances.
Info: (613) 996-5051

Festival Franco-Ontarien — June 20-24, 1997

Festival Plaza
One of the most important French celebrations in North America.
Info: (613) 741-1225

Ottawa Fringe Festival — June 20-29, 1997

Arts Court
Festival will feature over 40 independent theatre companies from Ottawa and around the world.
Info: (613) 232-6162

Ottawa Traditions

Reflections of Canada:

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May 14 to September 1, 1997
Canadian history and culture come alive through the dramatic narration of letters, journals and conversations of everyday Canadians.
Info: (613) 239-5000



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Parliament Hill
June 21 to August 23, 1997
Daily at 10 a.m. on the lawns of Parliament Hill.
In the event of rain, the performance is cancelled.
Info: (613) 239-5000

At the Museums...

Canadian Museum of Civilization

opening June 11, 1997
Canadian Postal Museum
The CPM is a repository of objects and information related to the heritage of postal communications in Canada and the world.
Info: (819) 776-7000

Canadian Museum of Contemporary Photography Info: (613) 990-8257

Canadian Museum of Nature

June 12 to September 15, 1997
"Through Artists' Eyes: The First Scientific Crossing of the Arctic Ocean"
Info: (613) 566-4700

Canadian War Museum

"Vimy Remembered"
Info: (819) 776-8600

National Aviation Museum

"Pushing the Envelope: Advances in Aviation Technology" A permanent exhibit showcasing the achievements of Canada's aviation industry since 1945.
Info: (613) 993-2010

National Gallery of Canada

"Out of the Sea: Sculpture and Graphics in the Inuit Art Collection" Numerous depictions of sea creatures — both real and mythological — reflect the strong relationship of coastal Inuit to their environment.
Info: (613) 990-1985

National Museum of Science and Technology

"Love, Leisure and Laundry: why housework just won't go away"
This exhibit explores the history of domestic technology and highlights gender relations in the home from the late 1800s to the end of the 20th century. Info: (613) 991-3044

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This ring is available to CDHA members for the cost of \$165.00, plus applicable taxes and shipping charges.

For more information, call CDHA at 1-800-267-5235

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Fifty (50) words or less, \$26.75 (GST included).

Additional words: \$0.54 per word (GST included).

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DEADLINE	ISSUE	CIRCULATION DATE
December 10	January/February	January 15
February 10	March/April	March 15
April 10	May/June	May 15
June 10	July/August	July 15
August 10	September/October	September 15
October 10	November/December	November 15

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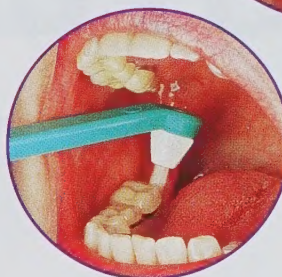
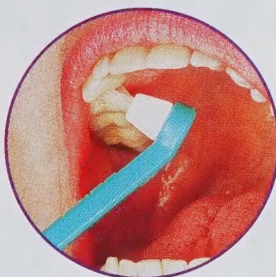
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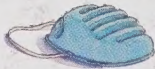
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WHILE YOU CAN'T BE THERE EVERY DAY TO FIGHT GINGIVITIS, LISTERINE CAN.

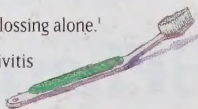


It's no secret that many people have trouble practicing proper dental care between check-ups. This of course, increases the chance



of gingivitis. But now with Listerine,* you can give your patients some additional help in the fight against gum disease. The fact is, Listerine has been proven to reduce the development of gingivitis* by almost 36% over brushing and flossing alone.¹

And while Listerine controls gingivitis as effectively as chlorhexidine, it doesn't stain or discolour teeth.¹ Which means Listerine can become



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Ask your dental distributor for information on 1.5L with free pump for operatory use.

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* "Listerine helps reduce gingivitis (minor inflammation of the gums caused by plaque above the gumline) when used in a conscientiously applied program of oral hygiene and dental care." CANADIAN DENTAL ASSOCIATION[†]

LISTERINE ANTISEPTIC - ANTIPLAQUE ANTINGINGIVITIS - MOUTHWASH INDICATIONS: Helps reduce gingivitis (minor inflammation of the gums caused by plaque above the gumline) when used in a conscientiously applied program of oral hygiene and dental care. Kills the germs that cause bad breath, plaque, gingivitis and sore throats due to colds. CAUTIONS: Keep out of reach of children. Do not swallow. Not to be used by children under 12 years of age. In case of accidental ingestion, contact a Poison Control Centre or doctor immediately. DOSAGE: Rinse full strength with 20 mL for 30 seconds twice a day. MEDICINAL INGREDIENTS: Eucalyptol 0.091% w/v, Thymol 0.063% w/v, Menthol 0.042% w/v. NON-MEDICINAL INGREDIENT: Alcohol. NOTE: Cold temperatures may cloud this product, its efficacy will not be affected. SUPPLIED: Original Listerine: Clear, amber liquid available in bottles of 250, 500, 750, and 1,000 mL. Cool Mint Listerine: Clear, blue, cool mint flavoured liquid available in bottles of 250, 500, 750, and 1,000 mL. Fresh Burst Listerine: Clear, green, mint flavoured liquid available in bottles of 250, 500, 750, and 1,000 mL.

[†] Gingivitis was evaluated using the Modified Gingival Index.

¹ TM Warner-Lambert Company Warner-Wellcome Inc. use Scarborough, Ontario M1L 2N3.

¹ Overholser CD et al. Comparative effects of two chemotherapeutic mouthrinses on the development of supragingival dental plaque and gingivitis. J Clin Periodontol 1990;17:575-579.

² Data on file, 1995.

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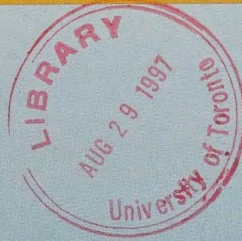


The Canadian Dental Hygienists Association

PROBE

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July/August 1997 vol. 31 no. 4



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Let's Talk the Business of Being a Dental Hygienist



I do not profess to be an expert on the art and science of dental hygiene, nor am I considered one of the "researchers" or pioneers in the field as are many of my illustrious colleagues (one of my more famous colleagues is actually identified as THE person to talk to about dental hygiene, perhaps even as the "Mother" of dental hygiene). However, I have been around a long time and have made some modest contributions to the profession, so I think I could probably be qualified as a "great aunt" of our profession—you know, the kind of person who

is eccentric, but you put up with them because occasionally they do have something relevant and interesting (if not downright unsettling) to say!

Of the issues that have surfaced within our group over the last 20 years or so, those of professionalism and independent practice have recurred most often. Both issues are a reflection and a natural development of the growth of any emerging profession. The issues themselves are not unique nor are they confined to the dental hygiene profession. What is unique though, is our profession's cloistered sense of the developments that have led to these two goals.

First of all let's talk basic business. As hygienists, we should be compassionate and knowledgeable health care providers. In the evolving world of business though, this is no longer enough to survive either as an individual or, on the larger scale, as a professional.

While we want to believe in the altruisms of access to care, self-governance and universality of services, what we as hygienists have to realize is that, whether we like it or not, dentistry is actually a small business. As a result of belonging to the larger business community we must be aware that the axioms which balance business also balance our existence. Those axioms include:

- Money = power = independence
- Perception of who has the power = reality.

How does this affect us as dental hygienists in our quest for greater recognition? The reality today is that, to a large extent, dentistry still holds the power in terms of our professional independence and our ability to achieve the goals which many of us feel are tantamount to survival. However, that does not mean that I am suggesting we curl up and die and continue to support the status quo. Au contraire, my colleagues, I am advocating that we get smart about how to function in this world of business which **only recognizes power as a basis for reality.**

For example, I have had many discussions over the last several years with hygienists who feel stifled in their practices and frustrated over their employer's perception of their contribution to the practice. Decisions are made for them on client load, time allocations for procedures, etc. Most of these hygienists looked surprised when I asked them: Have you ever done an efficiency analysis of your contribution to the practice? What is your net contribution to the practice? What overhead does your operatory function routinely at? How can you improve efficiency within your aspect of the practice, while still maintaining the quality control you expect to have? Could you develop a proposal based on this information and present it to your employer with the suggestion that "this is how I would like to work... plus here are the additional benefits to the practice situation based on this proposal"?

Most of the time, people stare at me as if I have betrayed the basic principles of dental hygiene, but guess what? These are simple business questions that are relevant to any aspect of any small business. If we don't learn how to answer (and ask) these questions, we won't ever break that equation of power, and we will never learn to function as independent practitioners regardless of the practice setting!!!

Do you as a clinical hygienist know to the nearest \$1,000 what you contribute to your practice on a gross and a net basis? Do you know the capital costs involved in running the practice particularly the equipment you use? When you present a proposal which is logical and shows advantages for both parties, hygienist and dentist, it is usually taken seriously, regardless of the politics of the situation. I have done this in the past in several practice settings and have always met with positive results. Some people might be tempted to say that I met with positive results, because as a rule, I have always been taller and heavier than any of my employers, but I prefer to think that it was logical business sense that prevailed!

How does that translate into professionalism and independent practice? Remember I said money = power = independence. In developing logical business plans, tailored to your practice of dental hygiene, you generate money. Let's pretend you not only did this but also incorporated a three- and five-year plan for implementation. Provided your information is sound and your projections realistic, any good business person will take a long hard look at what you propose. When you do generate additional revenue, even though not all of that money will be yours, you will find yourself in a different bargaining position for future employment arrangements. Guess what that is... POWER.

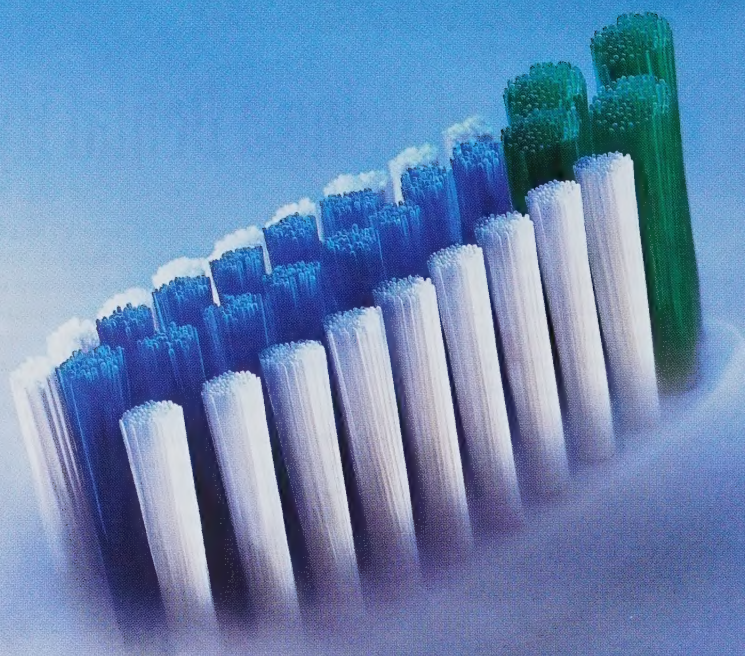
Let's say you could develop a future proposal which showed the benefits to the employer of a separate practice for dental hygiene within the parameters of scope of practice and other legislative hoopla. Would this not significantly increase your position and give you more power over your practice setting? Ultimately, if we as hygienists ever expect to practice in alternate settings, or independent situations, we have to learn to start thinking the way business thinks. That means applying dollar values to what we do and how we do it. That also means taking responsibility for achieving power in our own right as opposed to waiting for it to be handed to us.

So fellow hygienists, when you are looking at your personal professional development for the next year, take a look at some basic business courses. If you have a PC, load a quality accounting program, Quattro Pro or ACCPac, one which will do data analysis for you in minutes. This gives you key breakdowns of how to economize and project any items.

Next time you enter into negotiations for your salary, come prepared with documentation on your hourly net worth, your capital costs, your overhead percentages and options for increasing your gross intake. Make certain you understand cost-efficiency and how it applies to your work setting. Compare the cost-efficiency rating of your area to other areas of the practice. If you come up short, offer options which can change the ratio.

With improved business sense and the application of business principles, I see hygiene balancing the equation and moving forward professionally. Without it, I believe we will be lost in the barrens—always striving but never achieving!

Let's Talk ... (continued on page 136)



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Quiet Pride

July marks not only the beginning of summer but also the commencement of my presidential term. As did my predecessors, I look forward to having the opportunity to share some of my personal views regarding current issues with you in this and future editions of Probe.

The year is already proving to be hectic as I have just arrived home from participating in two very significant events in CDHA's calendar, the 34th Annual Session of the Board of Directors, and our 8th Annual Professional Conference. The Annual Session provided the Board with the opportunity to share the highlights of its past year's activities and outline those projects which will be guiding its actions for 1997/98. The meeting proved to be a fitting kick-off to the Conference which was appropriately titled *Dental Hygienists: Professionals Coast to Coast*.

This was the sixth CDHA Conference that I have attended and once again I was inspired by the incredible program provided in Ottawa. This year's Committee succeeded in organizing a program that was of interest to all practitioners, regardless of their area of responsibility, thus making the Conference a true national celebration of the "Profession of Dental Hygiene". While it is true that each region of the country is at a different stage of professional evolution, there is one key trait that unites us all, that being the immense PRIDE we have in our profession. I believe that everyone who attends our Conferences leaves "pumped up" with a renewed enthusiasm for this profession and eager to take on new challenges. This exuberance, however, tends to subside once they return back to real life and while the pride does not diminish, it transforms into more of a "Quiet Pride".

What do I mean by quiet pride? Quiet pride seems to be an inherent attribute of many dental hygienists and while it is not a bad thing, it has hindered our professional advancement and image. How many of us have missed an opportunity to correct the public's perception that the role of dental hygienists extends beyond "Oh, you are one of those people who scrapes my teeth and gives me heck for not flossing"? It is not that we aren't proud of our profession, but rather it seems that we do not want to be seen as being self-important and so we usually laugh off comments like the one above. It is disconcerting that many people either still perceive dental hygienists only as "cleaning ladies", or are unable to differentiate between ourselves and other allied dental personnel. One of CDHA's goals focuses on increasing both consumer access and choice to dental hygiene care, but how can the public seek and request our services if they don't know the invaluable role we play in their oral and general health?

What can we do to rectify this problem? CDHA is aware of the public's lack of awareness and will be working with the Provinces over the coming year to formulate strategies that will deliver our message and increase our visibility. However, our most powerful advocate and resource is you—the member. In our role as educators, we already work with clients on an individual basis to increase their knowledge of oral health, so it is only logical that we do the same to heighten their awareness that we do more than just "scrape teeth".

Who better to inform the public of what we offer than dental hygienists? We know that we are primary oral health care professionals who, either individually or in collaboration with other health professionals, apply our unique body of knowledge, expertise and recognized practice standards to develop appropriate treatment plans. We do this in consultation with our clients, to meet their specific needs. It is also important not to forget our ethical and legal responsibilities, especially for the over 90 percent of dental hygienists in the country who are self-regulated. We need to be more demonstrative of our professional pride by displaying our diplomas, National Dental Hygiene Certification Board certificates, annual licenses and when ever possible, wearing name badges and/or professional insignias. I am not implying that we need to start lecturing on street corners, but rather, when an appropriate situation arises, use the time to discuss our credentials, educate clients about why they should always seek our services for their preventive needs, and teach them to ask the right questions of those providing such services.

Now, more than ever, the only thing constant is change. The comfort and stability of traditional dental hygiene practice is starting to be challenged as external factors emerge that have the potential to directly influence the profession. In order to meet these challenges and secure a future for the profession, we all need to become proactive by grasping opportunities when they arise and INCREASE THE VOLUME of our PRIDE.



Judy Clarke is a 1987 graduate of the University of Alberta Dental Hygiene Program. She has worked full-time in private practice over the past ten years and continues to do so in Edmonton, Alberta.



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Dental Hygienist Volunteer Services in Honduras

In February, 1997 Jane Schnurr, Dip.D.H. and 17 other volunteers from across Canada travelled to Honduras, the second poorest country in Central America, to provide much needed dental care to residents. The "volunteer team" consisted of five dentists, one dental student, four dental hygienists, dental assistants and others who assisted with everything from scrubbing instruments to serving as interpreters. Dr. Amil Shapka of St. Paul, Alberta coordinated the project and prepared all participants for everyday living in Honduras prior to making the trip.

"Dorm" style accommodations were provided for volunteers complete with army-style cots and mosquito netting. Dental services were delivered by the team in one room school houses and in a local prison, where furnishings were both sparse and primitive—clients sat on wooden chairs, a plastic bag taped to the wall served as a cuspidor, and flashlights were the only light source. Volunteers provided treatment from early morning until sunset to long line-ups of waiting, but grateful children and adults. Services were limited to primarily extractions and a small quantity of restorations. According to Dr. Shapka "600 people were treated, 1600 teeth were extracted, 1600 restorations were placed, 16 dentures were fabricated, and eight root canals were completed".

Jane claims that the week she spent in Honduras will be in her memory forever—"It was a wonderful, challenging, growing experience both personally and professionally".

Jane Schnurr received the Diploma in Dental Hygiene from Niagara College in Welland, Ontario in 1981. She lives in Guelph and practices part-time in a general dental practice and part-time in a pedodontic practice. Jane volunteers at a local shelter for women answering phones for a crisis line.



Jane Schnurr, RDH (left) and Kelli Ducharme (right) providing dental services in a schoolhouse in Honduras.

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CDHA Officers/Staff Attend National Conference

Marnie Forgay (Past President), Carol Matheson Worobey (Executive Director), and Ellen Brownstone (Associate Executive Director) attended a two-day national conference and workshop (October, 1997) on *Towards Developing a Flexible Health Workforce* in Ottawa. The conference, which was sponsored by several professional associations and supported by Health Canada, Heritage Canada and The Medical Research Council of Canada was organized to identify issues and concerns of health professionals in Canada in developing an integrated human resources strategy. The conference format included key note addresses, a panel discussion, invited speaker presentations, and small group working sessions. The Final Report of the Conference was recently released.

Group reports were presented during a plenary session and many of the reports identified common themes: the need for a common, shared vision; concerns about decision-making (who or what is driving change and what is the role of the provider and the consumer in arriving at decisions), the need for the provider perspective to be broader than professional associations; the need to not lose sight of providing quality care; concerns that change may be introduced in an ad-hoc fashion; and a general anxiety about the impact of change on professional autonomy and job security.

During a final session of the Conference a shared vision of a *future flexible health workforce* was identified as:

- **makes the best use of resources**—where duplication is minimized, efficiency maximized, and where decisions are made collaboratively and based on the best available data
- **provides appropriate quality care**—care that is client centred, according to nationally coordinated standards; where professional competency is assured, and care is delivered by the provider deemed most appropriate to a particular circumstance
- **promotes wellness**—and advocates prevention, health promotion, and community based care
- **is provided within a supportive environment**—where there is mutual respect between disciplines and opportunities for collaboration, where professional autonomy is balanced with an appreciation of shared competencies, where workers are fully utilized, where there are clear lines of accountability, and a commitment to maintaining a safe learning environment.

Honour Bestowed on Dental Hygienist



On May 14, 1997 Sheryl Feller, Dip.D.H., M.B.A., CMC was accepted as a Fellow Certified Management Consultant (FCMC) of the Institute of Certified Management Consultants of Manitoba, at a Gala Dinner. The FCMC is awarded to individuals to recognize achievements in their practice and professional life and outstanding service to the profession of Management Consulting through work on behalf of the Institute, and to honour them for their contributions to the community.

The FCMC is awarded to individuals who command exceptional respect and merit.

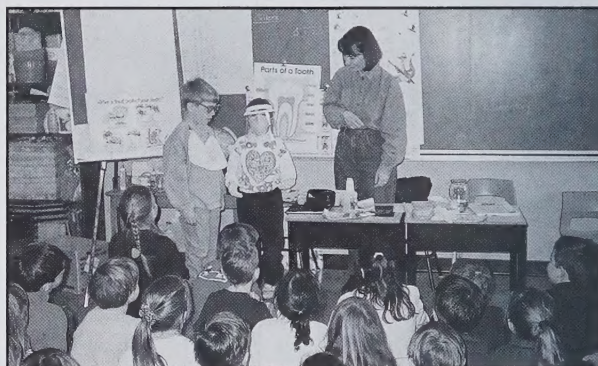
Sheryl is a long-time volunteer for CDHA and is a recipient of the CDHA Distinguished Service Award and has been honoured with Life Membership. She is President of SJB Management Consultants and resides in Sanford, Manitoba.

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Dental Health Month



Cindy Clancey, Dip.D.H. of Dartmouth, Nova Scotia gave an oral health presentation to Grade I students at Astral Drive Elementary School (Dartmouth) on April 17th during Dental Health Month. Among the topics discussed with the students were basic oral hygiene steps, nutrition, and the effects of bacteria on oral health.



Cindy Clancey, RDH during a role-playing session with student Matthew MacKinnion (client) and student Melissa Watts (dental hygienist) and rest of Grade I class at Astral Drive Elementary School.

LETTER TO THE EDITOR

Dear Editor: I am writing this letter in response to your request for members to comment on the question of a dental hygiene fee guide (*Probe*, Vol. 31, No. 1, 1997).

It's been my understanding that there hasn't been the need for the development of a dental hygiene fee guide because dental hygienists do not bill their clients, and dental hygienists are not reimbursed for their services by insurance carriers. I am a self employed contractor and I bill the dentist who contracts me for my services, based on an informal arrangement of a percentage of the fee charged to the client by the dentist. I believe that compensation for my services should be based on my level of education, my experience and abilities. A "commission" payment arrangement does not take into account the level of one's dental hygiene education or non dental hygiene education, the number of years of experience, expertise in a particular area of dental hygiene care, the quality of the services provided, or increases to dental hygiene fees in direct proportion to other dental fees.

It's my suspicion that there has been minimal, if any, input by dental hygienists into the construction of (provincial) fee guides for dental services. I believe dental hygienists need to develop a dental hygiene fee guide for the reasons stated above. It's my view that dental hygienists must explore the whole issue of compensation from the perspective of the value they place on the services they provide to clients. We risk being left out of the chain of decisions that affect our compensation, and we may even become "lost leaders" for dentists with slow practices, if we do not take responsibility for ourselves as professionals. At present I have "nothing to back me up" when I enter renegotiation of my next contract for my services. That is, I do not have information at hand on the appropriate value of dental hygiene services.

CDHA is a great organization and I expect that the Association will undertake to investigate the matter of a Dental Hygiene Fee Guide. I look forward to hearing more in the near future.

Yours truly,
Pam Vokey, Dip.D.H., Gander, Newfoundland

Psychological Predictors of Pain During Dental Hygiene Treatment

Abstract

This study examined the role of catastrophizing (i.e. a tendency to exaggerate the threat value of potentially painful situations) in predicting pain experience during dental hygiene treatment. Participants in the research were 100 patients undergoing scaling and/or root planing procedures at Dalhousie University's Dental Clinic. Following treatment, participants completed the Pain Catastrophizing Scale¹, a measure of emotional distress, a pain scale, and the Dental Anxiety Scale—Revised². Participants who scored above the median on the Pain Catastrophizing Scale were classified as catastrophizers, participants who scored below the median were classified as noncatastrophizers. Results showed that catastrophizers reported significantly more dental anxiety, emotional distress and pain than noncatastrophizers; and that distress reactions were more pronounced in men than in women. Discussion focuses on the importance of addressing psychological factors in dental hygiene practice, particularly as they relate to reactions to dental hygiene procedures, and avoidance of dental care.

Key words: Pain, emotional distress, dental hygiene, catastrophizing.

Psychological Predictors of Pain Experience During Dental Hygiene Treatment

Clinicians in dental practice have long been aware that people differ markedly in their ability to tolerate painful or stressful dental procedures. Certain individuals appear to be able to undergo dental procedures with little or no evidence of discomfort. For others, however, even the thought of undergoing dental procedures can produce significant distress³⁻⁴.

Over the past two decades, researchers have attempted to identify the psychological factors that contribute to distress reactions in response to painful or stressful procedures⁵⁻⁸. Several research investigations have shown that "catastrophizing" is associated with heightened pain experience^{7,9}. Catastrophizing refers to an exaggerated negative orientation toward stressful or painful situations^{1,5,6}. One of the first attempts to examine the correlates of catastrophizing was a study by Chaves and Brown⁵ where they examined dental patients' thoughts and coping efforts during a dental stress situation. Like many other subsequent investigations, they found that people who catastrophized tended to report more stress during a dental surgery procedure than individuals who did not catastrophize.

One of the factors that has impeded research in this area has been the difficulty associated with the measurement of catastrophizing. In Chaves and Brown's study, as well as in later investigations, research subjects participated in an extensive interview following the pain experience. In Chaves and Brown's study, subjects were asked to "...tell the experimenter as completely as possible what was going on through his/her mind during the procedure". Transcripts of the interviews were prepared and evaluated for the presence of coping and catastrophizing ideation. According to predetermined criteria, subjects were then classified as catastrophizers, copers, or deniers. The time and cost involved in

using interview-based procedures to assess catastrophizing limited their applicability to clinical settings.

Recently, Sullivan et al.¹ developed a short self-report instrument to assess the degree to which individuals catastrophize during painful experiences. The Pain Catastrophizing Scale (PCS) is a 13-item scale that asks respondents to endorse phrases describing different thoughts and feelings that may be experienced in painful situations. The PCS is based on a multidimensional view of catastrophizing that includes rumination (e.g., "I keep thinking about how much it hurts"), magnification (e.g., "I wonder whether something serious will happen"), and helplessness (e.g., "There is nothing I can do to reduce the intensity of the pain")¹. The PCS is written at a Grade 6 reading level, suitable for most patients seen in dental clinics, and can be completed and scored within five minutes.

The purpose of the present research was to examine the utility of the PCS as a measure of catastrophizing during dental hygiene procedures. The PCS was administered to a sample group of patients undergoing scaling and/or root planing procedures. Participants were asked to report the degree of pain and emotional distress they experienced during the procedure. Consistent with previous research, we predicted that patients who engaged in catastrophic thinking would report more pain and emotional distress than individuals who did not catastrophize.

Demographics

Participants in this research were 100 (44 men, 56 women) consecutive referrals to the Dalhousie University Dental Clinic. All participants were scheduled for scaling and/or root planing procedures performed by senior dental hygiene students. The mean age of the sample was 42.2 years (SD = 15.1). Participants were classified as catastrophizers or noncatastrophizers if they scored above or below the median (Median = 14) of scores of the PCS, respectively.

Measures and Methods

A four-point severity scale was used to indicate the location and distribution of hard and soft deposits on the teeth; (1) minimal supragingival plaque and calculus to (4) heavy supragingival plaque and calculus, generalized tenacious subgingival calculus, and staining. Ratings were made by dental hygiene students and were reviewed and confirmed by dental hygiene faculty.

Catastrophizing was assessed with the Pain Catastrophizing Scale¹. On the PCS, respondents are instructed to indicate the degree to which they experience each of 13 different thoughts or feelings when experiencing pain. A copy of the PCS appears in *Table 1*. Dental anxiety was assessed with the Dental Anxiety Scale-Revised². The DAS-R (check-up version) assesses the degree to which subjects experience fear or anxiety in response to imagining different aspects of dental procedures (e.g., preparing for a check-up, waiting for their turn in the chair, waiting while the dentist prepares the drill, and waiting while the dentist or hygienist prepares the scaling instruments).

Participants were also asked to rate the intensity of different moods they experienced during the dental procedure on 11-point scales with the endpoints (0) for **not at all** and (10) for **extremely**. The measure of mood consisted of nine mood adjectives that were combined to yield three separate subscales; 1) sadness (sad, discouraged, hopeless), 2) anger (angry, hostile, irritable), and 3) anxiety (anxious, afraid,

worried). Alpha coefficients were .82, .93, and .76, for the sadness, anger, anxiety subscales, respectively. Patients were asked to rate the intensity of the pain they experienced during the dental hygiene treatment on a single-item 11-point scale with the endpoints (0) for **no pain at all** and (10) for **extreme pain**.

Under normal circumstances, local anesthetic is not used during dental hygiene appointments. However, individuals with moderate or severe periodontal disease are offered local anesthetic prior to scaling and root planing procedures to allow thorough treatment while keeping the patient relatively comfortable. In this study, anesthetic was administered to 22 patients. Topical anesthetics and local anesthetics were administered either by a third- or fourth-year dental student, or by a dental faculty member.

Dental hygiene students asked patients to complete the PCS, the DAS-R, the mood questionnaire, and the pain scale upon completion of the dental hygiene appointment. Patients were also asked to report the aspects of dental treatment they found most bothersome. Patients were assured that responses would remain anonymous and that participation in the study was voluntary. Demographic information as well as information relevant to patients' dental hygiene habits (e.g., frequency of brushing and flossing) and vital signs which were taken at the beginning of the dental hygiene appointment were recorded from clinic charts.

Table 1

Name: _____ Age: _____ Gender: _____ Date: _____				
Everyone experiences painful situations at some point in their lives. Such experiences may include headaches, tooth pain, joint or muscle pain. People are often exposed to situations that may cause pain such as illness, injury, dental procedures or surgery.				
We are interested in the types of thoughts and feelings that you have when you are in pain. Listed below are thirteen statements describing different thoughts and feelings that may be associated with pain. Using the following scale, please indicate the degree to which you have these thoughts and feelings when you are experiencing pain.				
0—not at all	1—to a slight degree	2—to a moderate degree	3—to a great degree	4—all the time
When I'm in pain...				
1	☐	I worry all the time about whether the pain will end.		
2	☐	I feel I can't go on.		
3	☐	It's terrible and I think it's never going to get any better.		
4	☐	It's awful and I feel that it overwhelms me.		
5	☐	I feel I can't stand it anymore.		
6	☐	I become afraid that the pain will get worse.		
7	☐	I keep thinking of other painful events.		
8	☐	I anxiously want the pain to go away.		
9	☐	I can't seem to keep it out of my mind.		
10	☐	I keep thinking about how much it hurts.		
11	☐	I keep thinking how badly I want the pain to stop.		
12	☐	There's nothing I can do to reduce the intensity of the pain.		
13	☐	I wonder whether something serious may happen.		
TOTAL				
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Findings

Catastrophizers tended to be somewhat younger ($M = 39.6$) than noncatastrophizers ($M = 45.2$), $t(98) = 1.9$, $p < .06$. Heart rate and blood pressure did not differ as a function of level of catastrophizing. Catastrophizers did not differ significantly from noncatastrophizers in their frequency of brushing and flossing, or in the location and distribution of tooth deposits. Of the 22 patients who received anesthetic, 16 (73%) were catastrophizers, $X^2(1) = 4.4$, $p < .05$.

Consistent with previous research, catastrophizers reported significantly more emotional distress than noncatastrophizers. The results of a multivariate analysis of variance comparing catastrophizers and noncatastrophizers on the three mood scales appears in Figure 1, multi $F(3, 97) = 3.3$, $p < .05$. Catastrophizers experienced more sadness and anxiety during the dental hygiene procedure than noncatastrophizers. Significant interactions with the gender of the patient indicated that distress reactions as a function of catastrophizing were more pronounced in men than in women. Also consistent with previous research, catastrophizers reported significantly more pain during dental hygiene procedures than noncatastrophizers, $F(1, 99) = 10.5$, $p < .001$, and men reported more pain than women, $F(1, 99) = 4.1$, $p < .05$. These differences were seen even when statistically controlling for the location and distribution of tooth deposits.

Analyses revealed that there were more aspects of the dental hygiene situation that were bothersome to catastrophizers ($M = 1.2$, $SD = .76$) than noncatastrophizers ($M = .8$, $SD = .66$), $t(98) = -2.66$, $p < .01$. As shown in Figure 2, 28 patients reported being bothered by needles, 40 patients reported being bothered by pain, 11 were bothered by drills, five were bothered by smells and sounds, and 10 were bothered by the cost of dental hygiene treatment. Of the 28 patients who indicated that they were bothered by needles, 22 (80%) were catastrophizers, $X^2(1) = 10.2$, $p < .001$.

On the measure of dental anxiety, catastrophizers scored significantly higher ($M = 8.8$) than noncatastrophizers ($M = 6.4$), $t(98) = 3.7$, $p < .001$. As shown in Figure 3, catastrophizers reported more anxiety than noncatastrophizers when a) imagining that they had to return for a dental appointment the following day, b) that they were waiting for their turn in the dentist chair, c) that they were waiting while the dentist was preparing the drill, and d) that they were waiting while the dentist or hygienist was preparing the scaling instruments.

Figure 1—Male

Pain and Emotional Distress
During Dental Hygiene Treatment*

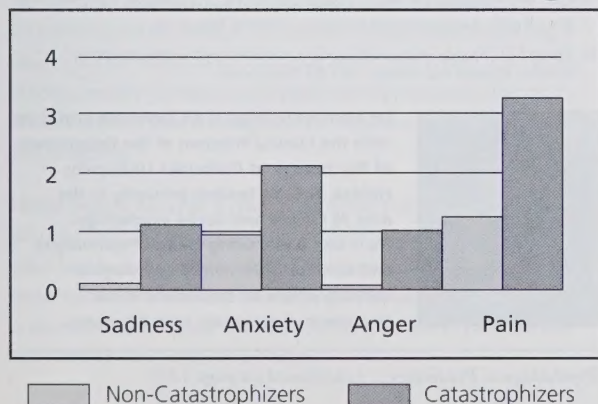
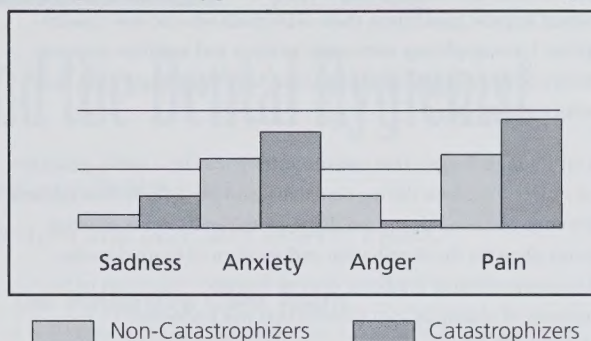


Figure 1—Female

Pain and Emotional Distress
During Dental Hygiene Treatment*



*Note: All ratings were made on a 0–10 scale with higher numbers representing increased emotional distress and pain.

Figure 2

Number of People Bothered by:

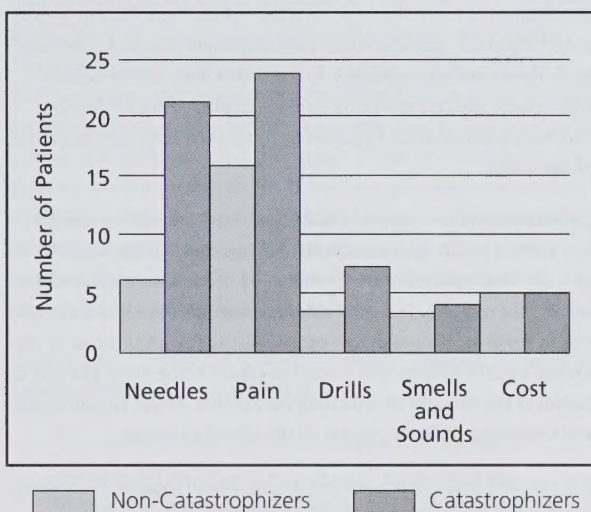
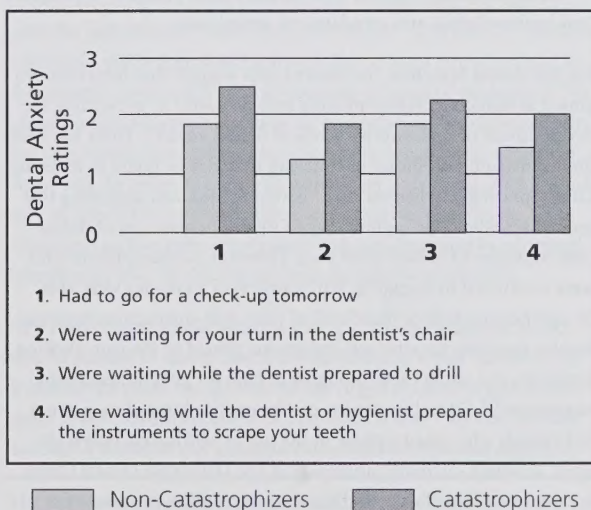


Figure 3

Catastrophizing and Dental Anxiety
How Would You Feel if You:



Discussion and Implications

The results of this study indicate that individuals who catastrophize experience significantly more emotional distress and pain during dental hygiene procedures than individuals who do not catastrophize. Catastrophizers were more anxious and sad than noncatastrophizers, and male catastrophizers were more angry than male noncatastrophizers.

Our findings suggest that catastrophizing may be a useful predictor of distress reactions during dental hygiene procedures. The relation between catastrophizing and distress was significant even when controlling for the distribution and location of tooth deposits, i.e. catastrophizing predicted distress reactions regardless of the amount of scaling or root planing that was performed by the dental hygienist.

An interesting finding was that catastrophizers were more likely than noncatastrophizers to receive anesthetic. Again the relation between catastrophizing and the likelihood of receiving anesthetic remained significant even when controlling for the location and distribution of tooth deposits. In other words, there did not appear to be "objective" indicators that catastrophizers required anesthetic more than noncatastrophizers. It is possible that catastrophizers' anticipatory distress reactions, or their display of pain behaviour, may have prompted the hygienist to recommend the administration of anesthetic.

Catastrophizers also reported that they were bothered by needles to a greater extent than noncatastrophizers. Indeed, the majority of patients who reported being bothered by needles were catastrophizers. In past research, fear of needles has been discussed as a primary reason for avoidance of dental care. Consistent with this line of reasoning, catastrophizers also tended to report being more anxious or fearful at the thought of returning for another dental appointment, and imagining different aspects of the dental situation.

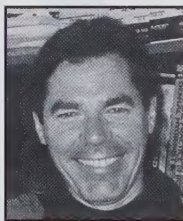
It is possible that catastrophizing during dental hygiene procedures may lead to the development of high levels of dental anxiety. As a function of repeated dental experiences characterized by high levels of emotional distress and pain, individuals who catastrophize may become increasingly more anxious about future dental visits. In turn, catastrophizers' high levels of dental anxiety may contribute to poor oral hygiene habits and avoidance of dental care.

For the dental hygienist, the present data suggest that interventions aimed at reducing catastrophizing may be useful in preventing the development of maladaptive levels of dental anxiety. There has been limited data on the efficacy of strategies that may be useful in reducing catastrophizing. Heyneman et al.⁹ have provided data suggesting that individuals who catastrophize may be unable to make use of distraction strategies to reduce their pain. However, catastrophizers who were instructed to engage in self-instruction strategies were able to significantly reduce their level of pain. Self-instruction strategies involve targeting negative self-statements related to the pain eliciting situation, and using these thoughts as cues for generating coping statements¹⁰. Dental hygienists can be easily educated to instruct individuals who catastrophize in the use of self-instruction strategies. Research currently underway at the Dalhousie Dental Clinic is examining the efficacy of different intervention programs for reducing the distress in individuals who catastrophize during dental hygiene procedures.

In summary, the present study showed that individuals who catastrophize experience more pain and emotional distress during dental hygiene treatment than individuals who do not catastrophize. The results also suggested that certain aspects of the dental hygiene situation, particularly injections, are more bothersome to catastrophizers than noncatastrophizers. It is recommended that dental hygienists receive training in methods to reduce distress in catastrophizers in order to prevent the development of high levels of dental anxiety and subsequent avoidance of dental care.

References

1. Sullivan, M. J. L., Bishop, S. R., Pivik, J. "The Pain Catastrophizing Scale: Development and Validation." *Psychological Assessment*. 1995 Vol 7: 524-532.
2. Ronis, D. L. "Updating a measure of dental anxiety: Reliability, validity, and norms." *Journal of Dental Hygiene*. 1994 Vol 68: 228-233.
3. de Jongh, A., Stouthard, M. E. A. "Anxiety about dental hygienist treatment." *Community Dental and Oral Epidemiology*. 1993 Vol 21: 91-95.
4. de Jongh, A., ter Horst, G. "What do anxious patients think? An exploratory investigation of anxious dental patient's thoughts." *Community Dental and Oral Epidemiology*. 1993 Vol 21: 221-223.
5. Chaves, J. F., Brown, J. M. "Self-generated strategies for the control of pain and stress." Paper presented at the Annual Meeting of the American Psychological Association, Toronto, Ontario, Canada. August 1978.
6. Chaves, J. F., Brown, J. M. "Spontaneous cognitive strategies for the control of clinical pain and stress." *Journal of Behavioral Medicine*. 1987 Vol 10: 263-276.
7. Spanos, N. P., Radtke-Bodorik, H. L., Ferguson, J. D., Jones, B. "The effects of hypnotic susceptibility, suggestions for analgesia, and utilization of cognitive strategies on the reduction of pain." *Journal of Abnormal Psychology*. 1979 Vol 88: 282-292.
8. Turk, D. C., Meichenbaum, D., Genest, M. *Pain and Behavioral Medicine: A Cognitive-Behavioral Perspective*. New York Guildford Press, 1983.
9. Heyneman, N. E., Fremouw, W. J., Gano, D., Kirkland, K., Heiden, I. "Individual differences and the effectiveness of different coping strategies for pain." *Cognitive Therapy and Research*. 1990 Vol 14: 63-77.
10. Meichenbaum, D., and Cameron, R. "Stress-inoculation training: Toward a general paradigm for training coping skills." In D. Meichenbaum and M. Jarensko (Eds.), *Stress Reduction and Prevention*. New York: Plenum Press, 1983.
11. Berggren, U. "General and specific fears in referred and self-referred adult dental patients with extreme dental anxiety." *Behavior Research and Therapy*. 1992 Vol 30: 395-401.
12. Corah, N. L. "Development of a dental anxiety scale." *Journal of Dental Research*. 1969 Vol 48: 596.
13. Corah, N. L., Gale, E. N., Illig, S. J. "Psychological stress reduction during dental procedures." *Journal of Dental Research*. 1979(a) Vol 58: 1347-1351.
14. Corah, N. L., Gale, E. N., Illig, S. J. "The use of relaxation and distraction to reduce psychological stress during dental procedures." *Journal of the American Dental Association*. 1979(b) Vol 98: 390-394.
15. Corah, N. L., Gale, E. N., Pace, L. F., Seyrek, S. K. "Relaxation and musical programming as a means of reducing psychological stress during dental procedures." *Journal of the American Dental Association*. 1981 Vol 103: 232-234.
16. de Jongh, A., Muris, P., ter Horst, G., Van Zuuren, F. J., De Wit, C. A. "Cognitive Correlates of Dental Anxiety." *Journal of Dental Research*. 1994 Vol 73: 561-566.
17. Gross, P. R. "Is pain sensitivity associated with dental avoidance?" *Behavior Research and Therapy*. 1992 Vol 30: 7-13.
18. McCaul, K. D., Malott, J. "Distraction and coping with pain." *Psychological Bulletin*. 1984 Vol 95: 516-533.
19. Scott, D. S., Hirshman, R. "Psychological aspects of dental anxiety in adults." *Journal of the American Dental Association*. 1982 Vol 104: 27-31.
20. Vassend, O. "Anxiety, pain and discomfort associated with dental treatment." *Behavior Research and Therapy*. 1993 Vol 31: 659-666.



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Psychological Predictors... (continued on page 135)

The Palliative Care Team and the Dental Hygienist

This feature article completes a three-part series on hospice/palliative care.

The first two articles were published in the 1997 March/April and May/June issues of Probe.

Introduction

Dr. Alfred C. Fones, who founded the first formal course of professional study for dental hygiene in 1913, emphasized that the role of educator was of paramount importance to the dental hygiene profession. He wrote:

"It is primarily to this important work of public education that the dental hygienist is called. She must regard herself as the channel through which dentistry's knowledge of mouth hygiene is to be disseminated. The greatest service she can perform is the persistent education of the public in mouth hygiene and all the allied branches of general hygiene."¹

It would seem that Dr. Fones' view of the role of the dental hygienist was orientated towards community health service. While the majority of dental hygienists may once have been employed in the public sector, the most current statistics provided by the Canadian Dental Hygienists Association indicate that only about four percent of dental hygienists are employed in public health, while the vast majority are found in private dental practices.

Changes in the health care environment are a national phenomenon at the present time, with much of the focus on hospital closure and transferral of funding to community-based services. According to demographer, David K. Foote:

"Provincial governments are closing hospitals and putting new emphasis on home health care just as the front end of the massive baby-boom generation is about to turn 50 and start needing more health care services. That means home health care will be a growth business in the years and decades to come, bringing with it employment for a wide range of health care personal service workers."²

Although the immediate and direct impact of these changes has been felt primarily by the medical community, dental hygienists are beginning to feel the effects of the changing health care system in a variety of areas, notably funding cuts to public health programs, changes to dental insurance plan coverage and the implementation of managed care programs.

Dental hygiene has a role to play in the delivery of home health care but the onus is on the members of the profession to educate the public, other health care professionals and, most certainly, themselves. One important facet to the role of dental hygiene in the delivery of services in the home environment will most definitely be that of palliative care and working with palliative care teams.

The Palliative Care Team

A typical example of a Palliative Care Team is the Victorian Order of Nurses (VON) Peel Branch, which has a team composed of ten Registered Nurses and two Registered Practical Nurses who receive ongoing education in the care of the terminally ill. The caseloads vary between 80 and 110 palliative clients at any one time.

Each new admission referred is assessed by a palliative nurse for appropriate follow-up. Some of these clients will remain on the palliative care nurses' caseload, while those who are stable will be visited by a VON staff nurse and followed on a consulting basis by one of the team members. Clients may be visited once a week or up to four times a day, according to individual need. The length of time in the palliative care program varies from days to months and, occasionally, for more than a year. When active treatment is no longer an option and death is the accepted outcome, the goal of the palliative care team is to provide comfort. Most of these clients remain at home and die peacefully, surrounded by all that is important to them.

Team members adhere to the belief as stated by Dame Cecily Saunders, founder of the hospice movement, that:

"You matter because you are. You matter until the last moment of your life, and we will do all we can not only to help you die peacefully, but also to live until you die."³

Role of the Palliative Nurse

The palliative nurses' role is to control symptoms and, along with physicians, social workers, hospice volunteers and chaplains, assist clients and caregivers along their journey. In addressing the issue of pain, the palliative care nurse thinks in terms of "total pain", i.e. physical, emotional, psychological and spiritual. Pain control is fundamental to the patient's quality of life and to the peace of mind of the family.⁴ The initial nursing assessment includes an evaluation of the following: physical pain, elimination, nausea, vomiting, nutrition, mouth, respiratory status and the ability to cope with activities of daily living (ADL), which may be affected by mobility, fatigue and cognitive impairment. Acute symptoms such as pain, constipation and vomiting must be addressed immediately and, for that reason, oral care may be overlooked.

At a 1996 conference on palliative care, Dr. Elizabeth Latimer stated that 50 percent of cancer deaths are attributed to sepsis. Recent dental literature has raised the question of the origin of bacteria and, in fact, point to the oral environment as a potential source.⁵ In view of these findings it is critical that palliative care nurses be educated regarding

The Palliative Care Team... (continued on page 136)

Prepared by Tricia Hughes

Whiteners in Dentistry

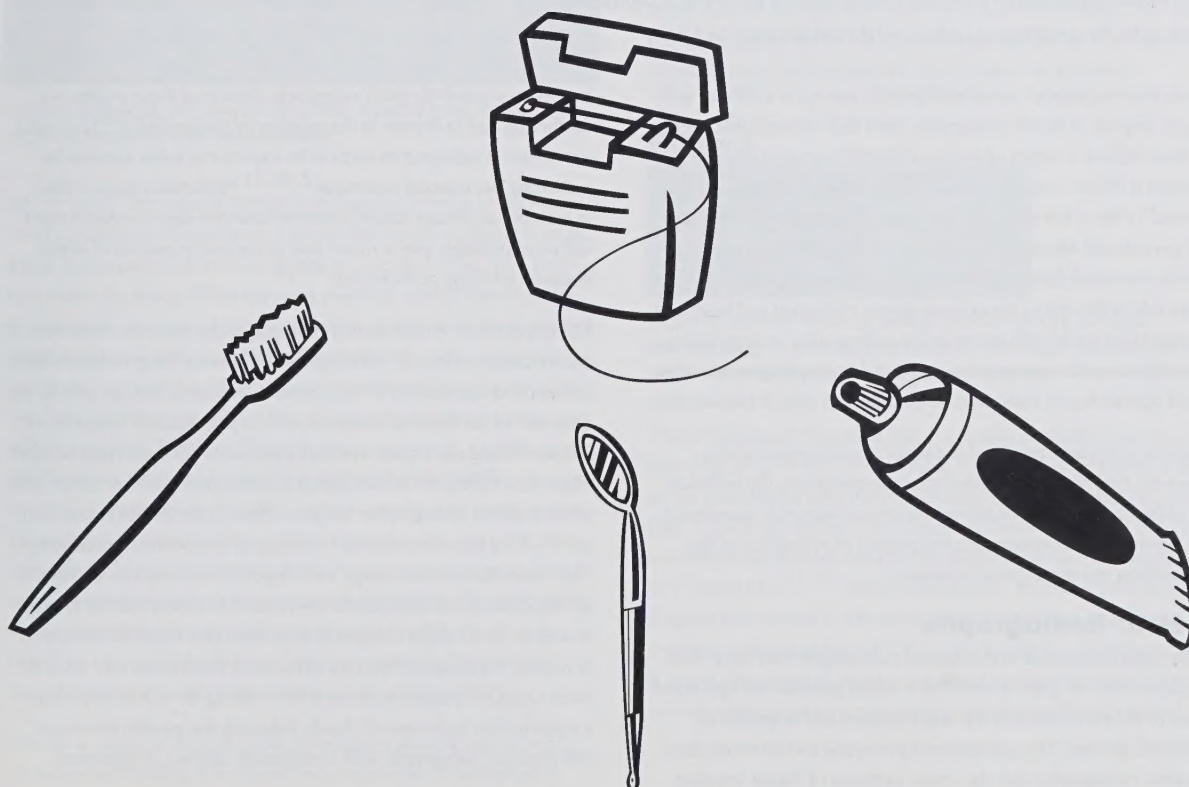
128

1. Recommended methods currently used to promote vital tooth whitening are:
 1. dentifrice
 2. in-office internal bleaching
 3. office monitored at home bleaching
 4. microabrasion
 - a) 1 and 2
 - b) 2 and 4
 - c) 1, 3, and 4
 - d) 1, 2, 3, and 4
2. After many inquiries from Mr. D., a longstanding client who is pursuing an acting career, Dr. W. just recommended an office monitored at home bleaching regime. He has yellow-orange staining on the maxillary anterior teeth. One of the questions he asks you is how long will the whiter colour remain after treatment.
 - a) 10 months for sure
 - b) one to three years prior to retreatment
 - c) indefinitely
 - d) unknown due to the individualized nature of the processes
3. Tooth whitening through bleaching is most successful on which of the following types of stains?
 1. yellow
 2. orange
 3. tetracycline
 4. light brown
 5. fluorosis
 - a) 1, 2, and 3
 - b) 1, 2, and 4
 - c) 2, 3, and 4
 - d) 3, 4, and 5
4. Commonly, the active agent in Office Monitored at Home Whitening systems is:
 - a) fluoride
 - b) 10% carbamide peroxide
 - c) baking soda compounds
 - d) 1% hydrogen peroxide
 - e) a hydrogen peroxide and baking soda compound
5. Good studies indicate that to maintain longterm effects of vital tooth bleaching retreatment is:
 - a) not necessary
 - b) only necessary if the patient eats or drinks a large amount of staining foods
 - c) often required after approximately one year
 - d) only required on geriatric clients
6. To promote safe, prompt, and effective office monitored home bleaching, which of the following must be closely adhered to?
 1. Promote feedback techniques to ensure clients understand instructions.
 2. Have clients return every two days for a five minute check to ensure that their tissues are not being effected and results are being achieved.
 3. Ensure, through careful evaluation, that the vacuum formed tray meets the criteria for a safe and complete fit.
 4. Develop and implement a follow-up program that assists clients with compliance and considers convenience.
 - a) 1 and 2
 - b) 2 and 3
 - c) 1, 2, and 3
 - d) 1, 3, and 4
 - e) 1, 2, 3, and 4

7. The concentration of hydrogen peroxide used for conventional in-office bleaching for vital teeth is:
- 10%
 - 10% to 17%
 - 25%
 - 35%
-
8. Rubber dam isolation for bleaching differs from an application for restorative procedures. Which of the following must be incorporated **ONLY** when isolating for an in-office bleaching for the maxillary anterior teeth?
- The rubber is carried below the interproximal contact point.
 - Special clamps are used so that the metal does not effect the mode of action the products used.
 - Ligatures are tied around each tooth.
 - A thicker dam is used.
-
9. Which of the following is/are accurate criteria for an effective and safe vacuum formed tray?
- trimmed 1/2 to 1/3 mm shy of gingiva
 - trimmed 5mm shy of gingiva
 - vacuum pressed plastic sheet thickness similar to that used for fabricating temporary/provisional restorations
 - vacuum pressed plastic sheet thickness the same as the material used for mouth protectors
- 2 only
 - 1 and 3
 - 2 and 3
 - 2 and 4
-
10. Which of the following items is **NOT** required to promote quality care when performing tooth whitening for clients?
- intra-oral photographs
 - oral medical history
 - alginate impression
 - shade guide
 - none of the above

Tricia Hughes is a graduate of the University of Alberta in Adult Education, and has been involved in many aspects of dentistry, practice management, team development and health care for 26 years. During the first part of her career she worked as a Certified Dental Assistant and Office Manager in private practice and public health. Her focus for the past 17 years has been dental hygiene/dental education—she has been an instructor and curriculum writer in the Dental Hygiene Program at Vancouver Community College since 1986, where she currently teaches behavioural science topics and biomaterials. Tricia is a part-time Assistant Professor in the Faculty of Dentistry at UBC, and provides consulting services to dental and medical practices, as well as small businesses.

Answer Key: 1. c, 2. d, 3. b, 4. b, 5. c, 6. d, 7. d, 8. c, 9. c, 10. e



By Anita Herzog, R.D.H., M.Ed., Associate Professor of Dental Hygiene and
Carlene Paarmann, R.D.H., M.Ed., Associate Professor of Dental Hygiene

Enhancing Accurate Assessment of Periodontal Disease by Improving Radiographic Interpretation

Abstract

One of the most difficult areas of radiographic interpretation is periodontal assessment—an area critical to the success of the role of today's dental hygienists charged with the responsibility of evaluation and treatment of periodontal disease. The accurate evaluation and interpretation of radiographs, used by dental hygienists in conjunction with a clinical periodontal examination, is essential for effective planning and provision of nonsurgical periodontal therapy and appropriate referral as necessary. Definitive assessments require high quality radiographs with the minimum of distortion. Currently, bitewing radiographs are the technique of choice for evaluation of periodontal structures, with the use of vertical bitewings (which allow the clinician to view osseous tissue in both arches simultaneously) recommended as disease progresses.

Clinicians have complete control over the various technical factors which may affect the processed radiograph and consequently the periodontal interpretation. The procedures highlighted in this article will result in good diagnostic quality with the minimum of exposure to the patient.

Accurate radiographic assessment also depends upon the ability of the hygienist to recognize the appearance of normal periodontal tissues as well as the periodontium in a diseased state. Because in the early stages of disease radiographic changes are difficult to observe, a keen, well-trained eye is required to see the slight alterations occurring in the periodontium. This article reviews the radiographic appearance of normal tissues and the generally accepted sequence of radiographic changes associated with periodontitis according to the American Academy of Periodontology (AAP).

Accurate interpretation of dental radiographic surveys is a difficult skill to master. Experts in dental radiography agree that "the area that appears to be most difficult in terms of precise, validated outcomes assessment techniques is that of common clinical radiographic interpretation and diagnosis."¹ One of the most difficult areas of radiographic interpretation is periodontal assessment. Inadequate evaluation of the periodontium and associated diseases is common.² As dental hygienists with a primary role in the area of periodontal disease evaluation and treatment, it is critical that we be well-versed in the radiographic interpretation of those diseases. Remember, however, that dental radiographs are an essential adjunct to, not a substitute for, a thorough clinical examination.

This article provides a review of the types of radiographs which produce the best results for periodontal interpretation, the technical factors affecting periodontal interpretation, radiographic assessment of the normal periodontium, and the process of evaluation of the periodontium in various states of disease.

Types of Radiographs

Various types of intraoral and extraoral radiographs have been used and studied over the years to determine which produce the best reproduction of the periodontium for interpretation and diagnosis of periodontal diseases. The conventional periapical and bitewing films, panoramic radiographs, and the newer methods of digital imaging

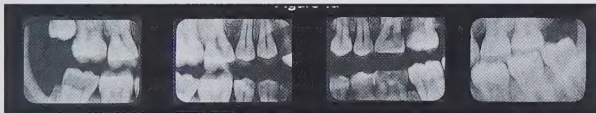
have been studied the most extensively. Results of these studies are conflicting and as diverse as the number of researchers.²⁻⁸ Currently, conventional radiographs seem to be superior to other systems for evaluating periodontal structures.^{2, 10, 11} Predictions suggest that, in the not too distant future, computer-assisted digital enhancement will most probably play a major role in the interpretation of dental diseases including periodontitis.¹¹⁻¹³

The importance of high quality radiographs for accurate evaluation of dental disease cannot be overemphasized. One of the problems which influences the sensitivity of conventional periapical radiographs in the diagnosis of periodontal disease is vertical angulation. Elongation or foreshortening can appear to either increase or decrease bony support when, in actuality, no actual change has occurred. Another factor, over which a dental radiographer has no control, is the dental radiograph itself—it is a two-dimensional recording of three-dimensional objects. This three-dimensional image with objects overlaying one another is, at best, difficult for clinicians to interpret. It is harder still for them to be able to detect slight changes in structures that might be indicators of disease. If periapical films are prescribed, meticulous care must be taken using the parallel technique with aiming devices to help ensure a reproducible technique. If closely followed, the parallel technique will produce radiographs with a minimum amount of distortion.

Until such time as digital enhancement is made easily useable and affordable for the average dental office, the best alternative is to use the conventional techniques that produce the least amount of distortion. The bitewing film appears to be the current radiograph of choice since it best achieves the principles of projection geometry for accurate photographic reproduction.¹⁰⁻¹³ In the bitewing film the central ray is positioned perpendicular to the tooth and film. This results in the minimal elongation, foreshortening, or erroneous projection of structures that may occur with the use of periapical films even when employing the parallel technique.

As illustrated in *Figure 1a*, conventional horizontal bitewings limit the amount of visible alveolar bone in both arches. As disease progresses, vertical bitewing radiographs (*Figure 1b*) are a better choice, allowing the hygienist to view the osseous tissue in both arches simultaneously.¹⁰⁻¹⁴ Vertical positioning provides up to one centimetre more viewing area than the horizontal bitewing, allowing the full extent of the alveolar bone, including furcations, to be seen. Posterior bitewing films should be taken using a +8° vertical angulation on the tube head angle guide, and +10° for anterior bitewings. The horizontal angulation must be perpendicular to the contact areas to prevent overlapping the crowns and associated bone.

Figure 1a



Conventional horizontal bitewings. The amount of visible alveolar bone in both arches is limited.

Figure 1b



Vertical bitewings. The amount of visible alveolar bone in both arches is improved with this technique.

Six- or seven-film series of vertical bitewings can provide an excellent recall examination alternative to frequent full-mouth radiograph series. These six to seven films provide complete coverage of the entire dentition except for apices. When exposing posterior vertical bitewings the second molar and second premolar teeth are centered on the molar and premolar films. For the anterior operators have a choice—depending on the size of the arch—of film size and number of views exposed. For two-film anterior series, #2 size film is used with the lateral incisor centered on the film. The three-film series is exposed on #1 size film. One central incisor exposure is made by centering the two maxillary incisors on the film. In addition, two lateral-canine exposures are made by centering the contact between those teeth on the film. In order to fit films vertically for bitewing exposures, the films must be placed away from the surfaces of the teeth which are towards the tongue. For the anterior view it is suggested that two adhesive bite tabs be used, the second placed on the end of the first to provide an extension. The patient should be advised to bite edge-to-edge for the anterior views.

Because a single radiograph yields information on only past activity of disease and healing, it is critical that comparison of radiographic

examinations be made over time.^{6, 11, 15, 16} These comparative radiographs, commonly referred to as *transmission radiographs*, should always be correlated with corresponding clinical evaluations.

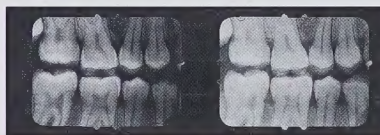
Technical Factors Affecting Periodontal Interpretation

There are a number of technical factors which may affect the processed radiograph and, thus, the periodontal interpretation. The operator has complete control over these factors and should follow prescribed procedure closely in order to produce a radiograph that will be of good diagnostic quality.

Standardized reproducible techniques are required in order to obtain high quality radiographs. As stated previously, the parallel technique is the method of choice when exposing periapical films. The assistance of an aiming device is helpful to ensure consistent exposures on all films for purposes of comparison. Principles of projection geometry advise the use of a long or sixteen-inch Position Indicating Device (PID) in order to minimize magnification and distortion, and also limit patient exposure.

The combination of a kilovolt peak (kVp) setting of 90 and milliamperage (mA) setting of 15 will also limit patient exposure. This machine setting also provides the advantage of a long-scale of contrast on the radiograph. A long-scale image has many shades of gray, which is valuable in helping technicians to discern slight changes in the periodontium. *Figure 2* illustrates the differing scales of contrast produced by high and low kVp settings. For the practitioner who is accustomed to seeing black and white high-contrast film (short-scale), this type of radiograph may appear to be light and slightly fuzzy, but research studies have shown that the diagnostic quality is better for evaluating periodontal disease. With practice it is of equal value as short-scale for diagnosing caries and other pathological lesions.^{11, 13, 17} Practitioners should attempt to incorporate this high kVp technique into their general practice to eliminate duplication of exposures; i.e., one setting for viewing caries and another for viewing the periodontium. The combination of using high kVp along with high-speed film is an effective means of reducing the patient's total exposure to radiation.

Figure 2



Scales of contrast differ according to levels of kVp settings. The bitewing on the left demonstrates short-scale contrast (70 kVp), while the bitewing on the right shows long-scale contrast (90 kVp).

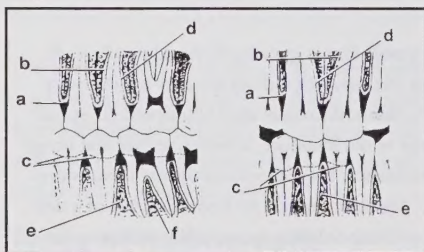
Use of Ektaspeed (E-speed) film is growing in dental practices. As with high kVp settings, the resulting radiograph may appear fuzzy to the practitioner who has traditionally used Ultraspeed (D-speed) film. A thorough review of the literature, however, reveals that image resolution and its usefulness in the diagnosis of disease is equivalent to D-speed film.^{11, 17} The introduction by Kodak in 1994 of a new E-speed film known as Ektaspeed Plus, has virtually overcome the problem of decreased detail. The major reason for choosing to use E-speed film is that it requires less radiation for film exposure and, as a result, reduces patient exposure by approximately 50 percent.^{17, 18}

Meticulous care in dark room procedures is required. A system of quality control should be used in order to maintain films of consistently high quality. Care should be taken to maintain the optimum concentration level of chemicals specified by the processor's manufacturer, and regular replenishment with fresh chemicals is essential for quality processing. Daily comparison of processed films with a test film (that is, one processed in a clean tank with fresh chemicals at optimum exposure setting) is a good way to evaluate the adequacy of the darkroom procedures. A schedule for thorough cleaning of the processing system and replacement of chemicals should also be employed. Complete systems of quality control can be found in a variety of sources.^{17, 18}

Radiographic Appearance of the Normal Periodontium

To assess disease properly one must be able to accurately recognize the appearance of normal periodontal tissues and be able to evaluate the supporting structures as shown in Figure 3. The *alveolar crest* is the topmost portion of the alveolar bone. It is composed of a dense cortical plate of bone and appears interproximally as a thin, radiopaque line covering the crest. According to the AAP, it is typically located approximately 1.0–2.0 mm apical to the cemento-enamel junction. In the posterior regions the shape of the alveolar crest is dependent upon the proximity and position of the adjacent teeth. When it is healthy the alveolar crest generally appears smooth and flat, and runs parallel to an imaginary line between adjacent cemento-enamel junctions (CEJs). In the anterior regions, the alveolar crest is sharp and pointed due to the size and proximity of adjacent teeth. The *lamina dura* is the thin plate of cortical bone which forms the wall of the tooth socket. This plate of bone is perforated by numerous microscopic foramina providing access for blood vessels and nerves to the periodontal ligament. Radiographically the lamina dura appears as a continuous radiopaque line of uniform width surrounding the root of the tooth and is located adjacent to the *periodontal ligament space* (PDL). This space contains connective tissue fibers, blood vessels, nerves, and lymphatics. A healthy PDL space appears as a thin radiolucent line between the root and the lamina dura. This line completely surrounds the root and, like the lamina dura, should remain consistent in width. The *interdental septum* is the proximal alveolar bone extending apically to the supporting bone. Its radiographic appearance varies between individuals. Generally, the trabeculae in the bone of maxillary anteriors are thin and numerous making the marrow spaces very small and appearing in a vertical pattern (see Figure 4a). Posterior patterns in the maxillary arch are very similar, except that the spaces are usually somewhat larger. In contrast, Figure 4b demonstrates that the marrow

Figure 3



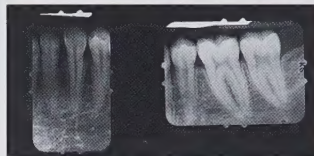
Appearance of normal periodontal tissues: a. alveolar crest; b. lamina dura; c. horizontal lines between adjacent CEJs; d. periodontal ligament space; e. interdental septum; f. interradicular bone.

Figure 4a



The trabecular bone pattern of the maxilla appears in a vertical pattern. Spaces in the posterior area appear somewhat larger than the spaces in the anterior area.

Figure 4b



The bone pattern of the mandible appears in a more horizontal pattern due to the thicker trabeculae.

spaces are large and fewer in number in the mandible due to the thicker trabeculae which appear there in a horizontal pattern. Similarly the mandibular posterior pattern is much the same as in the mandibular anterior with the exception of the apical areas of the molars where the pattern may vary from having very large spaces to areas where there is an apparent absence of trabeculae. The density of the supporting bone interproximally will increase or decrease depending on the proximity of the roots of adjacent teeth. Likewise, the form and position of multi-rooted teeth affect the bone between roots or interradicular bone.

Radiographic Appearance of the Periodontium in a Diseased State

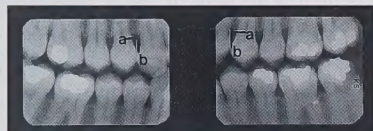
As always, radiographs play an important role in the evaluation and treatment of periodontal disease. They provide an overview or road map to be followed in treatment. When it is diseased, the *remaining* bone indicates the type of loss which has occurred, the distribution of that loss, and the severity of loss. As stated previously, a thorough clinical periodontal examination must be performed prior to the exposure and evaluation of radiographs. Before changes in the bone can be seen radiographically a 30–50 percent loss of mineralization must occur.^{2, 11, 12} Therefore, it is essential that dental radiographs be used in conjunction with the clinical exam and that they never be used as the sole source for the diagnosis of periodontal disease.

There is a generally accepted sequence of radiographic changes associated with periodontitis. The AAP classifies periodontal disease into four case types. The stages of disease are determined by the *percentage* of bone loss or the ratio of loss to remaining root structure. Since *Gingivitis* (AAP Case Type I) involves only soft tissue, it cannot be seen radiographically. All other periodontal classifications have radiographic implications.

Bony change in *Early Adult Periodontitis* (AAP Case Type II) appears only in the early stages of the disease and is confined to the area of the crestal bone. Figure 5a shows the early stages of radiographically evident disease where the crestal bony plate no longer appears uniform. The crest begins to appear broken down and more radiolucent than usual, and the normally flat interdental crest in the posterior areas loses its cortical density and appears fuzzy.

Subsequently a wedge-shaped radiolucent area—also called *triangulation* (figure 5b) because of its triangular appearance (it actually appears as an inverted triangle with the apex pointing apically)—is formed between the crestal proximal bone and the tooth surface. In the anterior region the usual sharp crest undergoes erosion and appears rounded instead of pointed, also leading to triangulation. This breakdown at the alveolar crest is generally seen in isolated areas of the mouth at this early stage. Care must be taken when evaluating triangulation since the PDL space is normally slightly widened in the crestal region.

Figure 5



Early Adult Periodontitis (AAP Case Type II). The incipient state of disease presents radiographic changes: a. there is a decrease in cortical density at the gingival crest; b. subsequent triangulation.

As the destructive process continues, erosion of the alveolar crest progresses into the deeper tissues and a bony pocket develops. The depth of the pocket is now no longer confined to the gingival tissue and destruction of the supporting periodontal structures begins. At this point the sequence of disease has changed to *Moderate Adult Periodontitis* (AAP Case Type III) which is evidenced by a 30–50 percent loss of supporting bone. It should be remembered that bone loss must be determined by percentage of loss rather than the millimeter measurement. For example the 4 mm loss on the mesial of the mandibular right canine (Figure 6a) where the root is long, is much less serious than the same 4 mm loss on the distal of the maxillary right central incisor (Figure 6b). The ratio of bone loss to the remaining clinical crown is the key to determining the amount of loss and the subsequent prognosis. Because of the amount of interradicular bone loss, furcation involvement begins to occur in the posterior areas (Figure 6c) along with the possibility of some related tooth mobility. This loss appears radiographically as a slight decrease in the opacity of the bone between the roots of multi-rooted teeth. The decrease in opacity may be difficult to see in the early stages, and it is usually not possible to distinguish whether the loss has occurred on the buccal or the lingual plate of bone.

Figure 6a, 6b

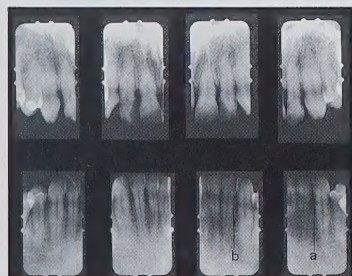


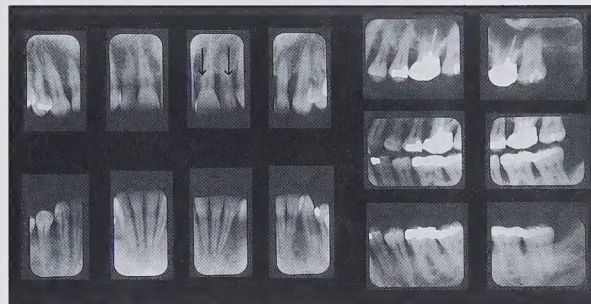
Figure 6c



In Moderate Adult Periodontitis (AAP Case Type III) bone loss must be determined by *percentage* of loss rather than pocket depth. The 4 mm bone loss on the mesial of #22 (a) is less significant than the 4 mm loss on the distal of #23 (b), where the root length is much shorter than that of the canine. Furcation involvement begins to occur in the posterior areas during this stage (c).

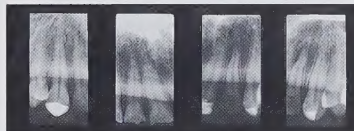
Figure 7 illustrates *Advanced Adult Periodontitis* (AAP Case Type IV) which is evidenced by a loss of at least 50 percent of supporting bone. Interradicular bone loss or furcation involvement will occur to a much greater extent than the barely discernible radiolucency evidenced in cases of moderate periodontitis. In addition there will be definite mobility of remaining teeth. As seen on the maxillary left central incisor, in cases where the entire facial or lingual cortical plate has been almost completely destroyed there may appear to be a horizontal line of demarcation running across the roots. Care must be taken not to confuse this line with one caused by superimposition of heavy lips or the nose in the maxillary anterior region. These structures may appear on the radiograph when high kVp technique is used (Figure 8).

Figure 7



Advanced Adult Periodontitis (AAP Case Type IV) presents a loss of at least 50 percent of supporting bone. Interradicular bone loss and furcation involvement are readily visible, and there will be definite mobility of teeth. The arrows points to a horizontal line of demarcation which runs across the roots. This line indicates the entire facial or lingual cortical plate has been almost completely destroyed.

Figure 8



The line of demarcation running across the roots is caused by superimposition of heavy lips or the nose in the maxillary anterior region. Do not confuse this line with cortical bone loss.

Description of Bone Loss

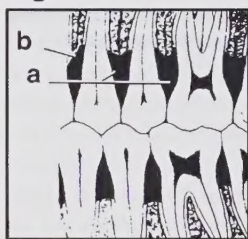
The measurement of bone loss can be accomplished in a variety of ways but the generally accepted method is to measure from the CEJ to the crest of the bone. This estimates the difference between the physiologic bone level and the height of remaining bone. As stated earlier, this measurement should be between 1.0–2.0 mm in a healthy mouth. Anything greater should be considered an indication of disease, etiological factors determined, and treatment initiated.

In moderate to advanced loss, bony pockets will be in evidence and may be either *suprabony* or *infrabony* (intrabony). The differences between the pockets is in the relationship of the soft tissue to the bone, the direction or pattern of bone loss, and the direction of the transseptal periodontal fibers. Suprabony pockets (Figure 9a) have their base *coronal* to the level of the alveolar bone so that the pattern of bone loss is horizontal and the transseptal periodontal fibers are

also horizontal between the base of the pocket and the alveolar bone. Horizontal (suprabony) loss is the term used to describe the uniform loss of interproximal bone. As the bone loss progresses in an apical direction, the crest of the bone is still evident in a horizontal plane parallel with an imaginary line extending between the cemento-enamel junctions of adjacent teeth and perpendicular to the long axes of those teeth. This is the most common pattern of bone loss. An infrabony (inrabony) pocket, on the other hand, is evidenced by a vertical or angular loss of bone (Figure 9b). This occurs because the base of this type of pocket is *apical* to the crest of the alveolar bone. The bone is reduced on one side of the proximal crest between adjacent teeth at a greater degree than on the other side. As a consequence, it is no longer parallel to the two CEJs nor perpendicular to the long axes of the teeth. It appears radiographically as a V-shaped defect. The transseptal fibers are, therefore, also oblique rather than horizontal.

Alveolar bone loss may be further classified by *distribution* and is described as being either *localized* or *generalized*. Localized bone loss occurs in isolated areas of the mouth, generally bilateral, whereas generalized bone loss occurs in a fairly uniform pattern throughout the mouth. Horizontal bone loss is found in either form and as disease progresses, and (as illustrated in Figure 9a) is commonly seen as generalized. Vertical or angular bone loss, however, is more often localized, even when disease is advanced. Although Figure 9 shows vertical loss on the distal of a canine, the most common location for an angular infrabony pocket is on the mesial of second and third molars.

Figure 9



9a. Suprabony pockets (horizontal bone loss) have their base coronal to the level of the alveolar bone. As the bone loss progresses, the crest of the bone remains in a horizontal plane parallel with an imaginary line extending between the CEJs of adjacent teeth and perpendicular to the long axes of those teeth.

9b. Infrabony pockets (vertical bone loss) have their base apical to the crest of the alveolar bone. The crestal bone is no longer parallel and appears radiographically as a V-shaped defect.

Other osseous defects as shown in Figure 10 may also be evidenced in the advanced stages of periodontitis. Because of the three-dimensional overlapping of structures it is sometimes not possible to see all types of these lesions radiographically. In some cases only slight increases in radiolucency may be apparent—and here we reiterate the importance of careful probing. Trough-like depressions called *interproximal craters* may occur (Figure 10a). These defects are bordered on two sides by the roots of adjacent teeth and on the other two sides by facial and lingual cortical plates. Images of the side walls will be evidenced on the radiograph but the extent of depression between the facial and lingual plates is less apparent. The individual walls may be seen in some cases when one wall (the one more apically projected) appears more dense and the other reduced in density. If the two walls are superimposed perfectly, the crater may simply appear as a linear area of decreased density between the two teeth.^{13, 17} They may also be masked entirely and not be visible at all. Cratering is more prevalent in posterior segments of the mouth.

Figure 10



Other possible osseous defects evidenced in advanced stages of periodontitis:

- a) interproximal crater;**
- b) interproximal hemisepta.**

An *interproximal hemiseptum* (Figure 10b) lacks one interproximal alveolar wall as well as one or both of the facial or lingual walls. It appears as a vertical V-shaped radiolucent defect. When both facial and lingual plates are gone, it is radiographically impossible to tell the difference between interproximal hemisepta and angular or vertical bone loss.^{13, 17}

Alveolar dehiscences are also sometimes seen in the advanced stage of periodontitis. A dehiscence is a condition where the marginal bone dips apically to expose a length of root surface. Dehiscences occur most often on labial surfaces of anterior teeth and are frequently bilateral. Because these defects occur facially or infrequently lingually, they are difficult to observe radiographically.¹⁷

Periodontal abscesses (Figure 11) are also a common occurrence in the advanced stages of periodontitis. The infection begins in a deep soft tissue pocket and when the coronal portion of the pocket becomes occluded, and continues to progress and destroy bone in an apical direction. Abscesses can also be caused by the prolonged presence of foreign materials between the tooth and tissue.¹⁷ This infection process can sometimes be seen radiographically as discrete radiolucencies along the lateral side of the root of the tooth. If the abscess occurs on the facial or lingual aspect, the lesion will not be visible radiographically since the root will be superimposed. As with any other type of oral lesion, the periodontal abscess must be advanced in order to be seen on the radiograph. Early lesions involving soft tissue only will be invisible.

Figure 11



The arrow points to a periodontal abscess. When a periodontal abscess is radiographically apparent, it will appear as a discrete radiolucency along the lateral side of the root of the tooth. If the abscess occurs on the facial or lingual aspect, it will be not radiographically visible.

Summary

The importance of using radiographs in conjunction with a thorough clinical examination for evaluation and treatment of periodontal disease cannot be overemphasized. Use of one without the other will result in inferior assessment and will be a disservice to the patient. Selection of the correct exposure type and control factors along with accurate evaluation and interpretation of radiographs by dental hygienists is critical. The competent clinician will routinely use transmission radiographs in the evaluation process in order to plan and provide treatment effectively and to suggest referral when indicated.

References

1. Weems, R. A., Firestone, A. R., Heaven, T. J. "Preliminary evaluation of an educational outcomes assessment process for dental interpretive radiography." *J Dent Ed.* 1992, 56: 746-750.
2. Jeffcoat, M. K. "Radiographic methods for the detection of progressive alveolar bone loss." *J Perio.* 1992, 63: 367-372.
3. Akesson, L., Hakansson, H., Rohlin, M. "Comparison of panoramic and intraoral radiography and pocket probing for the measurement of the marginal bone level." *J Clin Perio.* 1992, 19: 326.
4. Benn, D. K. "Limitations of the digital image subtraction technique in assessing alveolar bone crest changes due to misalignment errors during image capture." *Dentomaxillofac Radiol.* 1990, 19: 97-104.
5. Hausmann, E. A., Allen, K. M., Piedmonte, M. R. "Influence of variations in projection geometry and lesion size on detection of computer-simulated crestal alveolar bone lesions by subtraction radiography." *J Perio Res.* 1991, 26: 48-51.
6. Kantor, M. L., Zeichner, A. J., Valachovic, R. W., Reiskin, A. B. "Efficiency of dental radiographic practices: Options for image receptors, examination selection, and patient selection." *JADA.* 1998, 119: 259-268.
7. Molander, B., Ahlqvist, M., Grondahl, H. C., Hollender, L. "Agreement between panoramic and intraoral radiography in the assessment of marginal bone height." *Dentomaxillofac Radiol.* 1991, 20: 155-160.
8. Osborne, G. E., Hemmings, K. W. "A survey of disease changes observed on dental panoramic tomographs taken of patients attending a periodontology clinic." *Br Dent J.* 1992, 173: 166-68.
9. Shrout, M. K., Powell, B. J., Hildebolt, C. F., et al. "Digital radiographic image-based bone level measurements: Effect of film density." *J Clin Perio.* 1993, 20: 595-600.
10. Hausmann, E. A., Allen, K. M., Christersson, L., Genco, R. "Effect of x-ray beam vertical angulation on radiographic alveolar crest level measurement." *J Perio Res.* 1989, 24: 8-19.
11. Jeffcoat, M. K. Imaging techniques for the periodontium. In Wilson, T. J., Kornman, K. S., Newman, M. G. eds. *Advances in Periodontics.* Chicago: Quintessence, 1992, pp. 47-55.
12. Reddy, M. S. "Radiographic methods in the evaluation of periodontal therapy." *J Perio.* 1992, 63: 1078-1084.
13. Williamson, G. F. Radiographic assessment. In Woodall, I. R. ed. *Comprehensive Dental Hygiene Care.* 4th ed., St. Louis: CV Mosby Co., 1993, pp. 215-220.
14. Thomson-Lakey, E., Tolle-Watts, L. "A practical guide for using radiographs in the assessment of periodontal diseases, Part I: Technique." *J Pract Hyg.* 1994, 3: 11-16.
15. Hollender, L. "Decision making in radiographic imaging." *J Dent Ed.* 1992, 56: 834-843.
16. Jeffcoat, M. K., Reddy, M. S. "A comparison of probing and radiographic methods for detection of periodontal disease progression." *Curr Opin Dent.* 1991, 1: 45-51.
17. Goaz, P. W., White, S. C. *Oral radiology: Principles and interpretation.* 3rd ed., St. Louis: CV Mosby Co., 1994, pp. 55-338.
18. deLyre, W. R., Johnson, O. N: *Essentials of dental radiography for dental assistants and hygienists.* 5th ed., East Norwalk, NJ: Appleton & Lange, pp. 77-151.



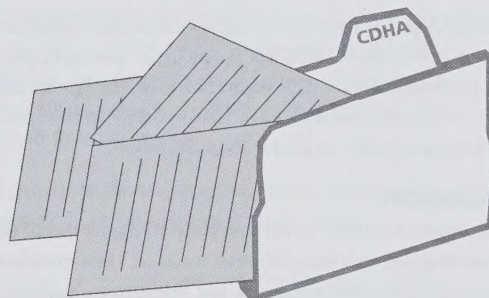
Professor Herzog obtained both her undergraduate and graduate degrees at Idaho State University. She is currently an Associate Professor of Dental Hygiene at ISU. As coordinator of dental radiology, she teaches junior and senior dental hygiene students and serves as a member and dental consultant to the University Radiation Safety Committee. She has attended numerous post-graduate institutes for dental radiology educators and

consults regularly with area dental offices. Anita also teaches in the expanded functions portion of the curriculum. She has delivered numerous presentations on a variety of topics at the state and national level in the United States. In addition to professional journal articles on dental radiology, she has authored articles ranging from smokeless tobacco, local anesthesia, and model dental hygiene curricula, to clinical studies on prosthetics and subgingival irrigation. She has recently authored a chapter for the new dental hygiene clinical textbook titled, *Concepts in Nonsurgical Periodontal Therapy.*



Carlene Paarmann is a Professor and the Assistant Chairperson of the Idaho State University Department of Dental Hygiene. She teaches local anesthesia to junior and senior dental hygiene students and is the coordinator of the expanded functions curriculum. Professor Paarmann has been recognized at the state and national levels through her journal, textbook, and other scholarly publications. In addition to written

research and public presentations, Carlene has participated as either principal or co-author of numerous grants and/or contracts throughout her years at ISU and has developed a software program for clients' oral self care. She has been the recipient of various professional appointments and teaching awards.



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PSYCHOLOGICAL PREDICTORS... (continued from page 126)

Prior to taking a faculty position at Dalhousie University, Dr. Sullivan spent five years working as a clinical psychologist at The Rehabilitation Centre in Ottawa. His work at the Centre focused on the relation between depression and pain, and the psychological predictors of disability following injury. Dr. Sullivan's research is funded by the Social Sciences and Humanities Research Council of Canada and Human Resources Development Canada.



Nancy Neish is currently an Assistant Professor with the School of Dental Hygiene at Dalhousie University. Prior to joining the Faculty of Dentistry in 1984, she practiced clinical dental hygiene for ten years in specialty and general practices, hospital and community health settings in Nova Scotia and Ontario. She has been actively involved with organized dental hygiene on both the

Provincial and National level. She is Course Director for Dental Hygiene Theory, Professional Issues and Clinic Coordinator for Senior Dental Hygiene students. She works one day a week with a general dentist in private practice.

Over the past three years, Dr. Sullivan and Prof. Nancy Neish have been collaborating on research addressing how psychological factors contribute to individuals' experience of physical and emotional distress during dental hygiene treatment. By studying how distress may be minimized during dental hygiene procedures, they hope that their work will lead to the development of interventions that will reduce avoidance of dental care and ultimately have a positive impact on individuals' dental health.

the importance of addressing oral hygiene care, most particularly as disease progresses and ADL become more difficult. There is a natural assumption on the part of the nurse that the clients are maintaining their oral care or, failing that, the caregiver in the home is providing this service, but it is frequently wrong. In addition caregivers are frequently uncomfortable with mucous secretions or handling and cleaning dentures or partial dentures.

Role of the Dental Hygienist

Taking into consideration the grave consequences of infection and the importance of good preventive oral hygiene care, there is a strong role for the dental hygienist on the "front line", first and foremost as an educator. Nurses, homemakers, hospice volunteers, palliative clients, and their families, all need to be educated regarding appropriate oral care, as well as advised regarding management of the most commonly reported symptoms of xerostomia, halitosis and sore membranes⁶, and caries prevention. Dental hygienists can do much to improve the quality of life and promote self esteem for terminally ill clients.

With improved symptom management, clients are often functional until the last days of life, therefore dental problems need to be addressed, since appearance and comfort remain extremely important to the quality of life. The dental hygienist's role can be instrumental in assessing the oral care needs in the comfort of the client's own home and making appropriate referrals to a dental office. This is far more acceptable than forcing a client who may suffer from shortness of breath, or is coping with poor mobility related to bone metastasis, to struggle into a dental office for an assessment.

The dental hygienist must work towards establishing a collaborative relationship between all of the key players in the delivery of oral care to the terminally ill client. This will include ensuring that the client's dentist is made aware of any care or services being rendered and establishing a mutually acceptable referral protocol.

Conclusion

The provision of oral care to the terminally ill requires special skills and knowledge beyond dental hygiene expertise. There must be a thorough understanding of the goals and philosophy of palliative care⁷. It requires an awareness of medical and psychosocial issues regarding the dying patient, thus further education must be undertaken. Studies in gerontology as well as palliative care nursing and hospice training would be helpful. Dental hygienists are prevention-oriented and must adjust their focus somewhat when treating palliative care clients since, at the end stage of life, oral care must focus more on comfort than

on prevention. Palliative care nurses state that most of their end-stage clients are less capable of showing concern for body and oral hygiene care as they near the end of their lives. It is believed that as death approaches, the senses begin to shut down from the extremities inwards. It seems logical that the mouth would be the final source of sensation as this occurs and so it should be kept as clean and comfortable as possible.

References

1. Fones, A. C. *Mouth Hygiene*. Fourth edition, Philadelphia, Lea & Febinger, 1934: 248.
2. Foote, D. K. *Boom, Bust and Echo*. Macfarlane, Walter & Ross, Toronto, 1996: 72.
3. Callanan, M., Kelley, P. *Final Gifts*. Bantam, 1992: 26.
4. Latimer, E. J. "Palliative care: Easing the pain." *The Canadian Journal of Diagnosis*. September 1996.
5. Navazesh M., Mulligan, R. "Systemic dissemination as a result of oral infection." *Special Care in Dentistry*. 1995 Vol 15 No. 1.
6. Wyche, C. J., Kerschbaum, W. E.: "Michigan Hospice Oral Healthcare Needs Survey." *Journal of Dental Hygiene*. 1994 (January-February) Vol 68 No. 1.
7. Lapeer, G. L. "The Dentist as a Member of a Palliative Care Team." *Canadian Dental Association Journal*. 1990 (March) Vol 56 No. 3.

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Donna Bowes is a 1980 graduate of the dental hygiene program at Algonquin College, Ottawa. She earned her Diploma in Multidiscipline Gerontology in 1989 from Georgian College in Barrie, Ontario. She is presently chairing a task force investigating delivery of oral care services to the home-bound for the Peel District Health Council. Her work experience includes private practice and public health, where she developed and

implemented a unique dental program delivered to nursing homes, homes for the aged and hospital chronic care units. Donna served on the Transitional Council of the College of Dental Hygienists of Ontario and is an active member of the ODHA Task Force on Alternative Practice Settings as well as the Executive Council of the CDHA.



Teddi Murray is a 1962 graduate of the nursing diploma program of Toronto Western Hospital. She has taught palliative care at both Sheridan College and through the Palliative Care Initiatives program. Teddi has been with Peel VON for the last eight years as a member of the Palliative Care Team. Her past work experience includes intensive care, public health and employee health and safety, as well as nursing in a minimum security penitentiary. Teddi is

a member of the Peel Palliative Care Resource Team and is an advisory board member of St. Hilary's Seniors Day Care Centre. She has achieved a Level III therapeutic touch certificate.

LET'S TALK... (continued from page 115)

Audrey Newcombe holds a Diploma in Dental Hygiene (1974) from the University of Manitoba, a Bachelor of Science degree (1989) from the University of Waterloo and a Vocational Training Certificate from the Department of Education, Province of Prince Edward Island. She has worked in clinical practice, in community health, and as a consultant for Horner Pharmaceuticals. Currently she is a Learning Manager in the dental assistant program at Holland College. Audrey's volunteer

experience is extensive and includes work with the Association for School Health (PEI), Canadian Home and School/Parent Teacher Association, PEI Home and School Association, Student Association of Canadian Home Economists, the PEI Dental Assistant's Association, the Saskatchewan Dental Hygienists Association, and the CDHA. She served as President of CDHA in 1985-86, and was awarded Life Membership in 1989.

Genetronics Seeks Regulatory Approval for Head and Neck Cancers

Genetronics Biomedical Ltd., a U.S. based company which has developed a proprietary drug delivery system, will seek regulatory clearance in the United States and Europe to initiate clinical trials to test its system on patients with late-stage head and neck cancers. This announcement follows a pilot study at Rush-Presbyterian-St. Luke's Medical Center in Chicago, in which tumor shrinkage occurred in nine patients with severe head and neck cancers who were treated with Genetronics' electroporation therapy system.

Electroporation involves the application of instantaneous, controlled pulses of electricity to the human cell which causes pores to open in

the cell membrane. In turn, this allows a previously injected anti-cancer drug to enter the tumor cell, where it more effectively can work to kill the tumor. Electroporation therapy potentially has significant advantages compared to chemotherapy, because much less of a potent anti-cancer drug, perhaps as little as $1/50$ of the usual systemic dose, is needed to be administered yet more of the drug actually penetrates the tumorous cell membrane. It is also potentially less expensive than conventional cancer treatments.

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Approval for Independent Dental Hygiene Practice in Denmark

After years of intense lobbying, in 1996 dental hygienists in Denmark obtained authorization to practice independently without the supervision of a dentist. The Danish Act on Dental Hygienists stipulates that only those who have received authorization from the Board of Health may use the title Dental Hygienists and that only those who have received such an authorization may practice as Dental Hygienists. Authorization can only be obtained after an individual successfully completes a formal dental hygiene education program, as approved by the Minister of Education. An Authorized Dental Hygienist may "run an independent business as a dental hygienist without

the requirement that patients must be referred from a dentist". The education for dental hygienists will be extended from the present 2-year program to $2\frac{1}{2}$ years "in order to extend the education in a number of dental subjects with a view to running an independent dental hygiene clinic". According to this new legislation, dental hygienists will work under the supervision of the Danish Board of Health.

By the beginning of the new year, two dental hygiene clinics for the treatment of periodontal diseases had opened.

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THE ROLE OF THE DENTAL COMMUNITY

Ms. Donna Denham and Ms. Joan Gillespie,
Social Work Consultants
New Brunswick Dental Hygienists Association,
Moncton, NB.....(506) 384-8728

Asset Allocation and Portfolio Performance

144 *Did you know that studies have shown that
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Asset allocation works on a very simple principle, and that is "Don't put all your eggs in one basket". The asset mix is essentially the percentage of a portfolio that is represented by each class of investment, be it equities, fixed income, or cash and cash equivalents.

Studies have shown that as much as 85 percent of an investment portfolio's return stems from the asset mix decision, 5–10 percent from market timing and the remaining 5–10 percent from security selection. Since returns compound over time, even modest changes

in asset mix can lead to significant changes in the return over the life of a portfolio.

Although the cornerstone of asset management is the establishment of clear and concise objectives, it is essential to define your individual tolerance for risk before an asset allocation plan can be formed. The key risk factors are inflation, interest rate, economic market and specific risk. A structured plan will balance the risk/return tradeoffs of different classes.

Establishing and implementing an asset allocation and formal re-balance strategy in a portfolio helps to eliminate the emotional swings of the market. With a focus on the long-term, you can maximize purchasing power and enhance the real returns on your invested capital while simultaneously limiting risk effectively.

If you would like further information on how to set up a portfolio using asset location, or if you would like a review of your existing portfolio, please call your nearest Midland Walwyn Capital Inc. Financial Advisor. Or call the CDHA Program Manager at 1-800-563-6623



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ARTICLE:

The Relationship Between Life Events and Periodontitis

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Authors: Croucher, R., Marcenés, W. S., Torres, M. C. B. M., Hughes, W. S., Sheiham, A.

Journal: *Journal of Clinical Periodontology* 1997; 24: 39-43

The authors of this study had previously correlated life-events (eg. marital/family problems, death of a relative, serious illness, financial difficulties, mugging) with acute and chronic oral symptoms. This led them to consider whether psychosocial events might effect various periodontal diseases. A thorough and extensive review of the published literature appeared to support the thesis that there was a relationship between life events and periodontitis. Although the events themselves did not initiate the disease, they appeared to be involved in some capacity; particularly for the condition ANUG (acute necrotizing ulcerative gingivitis).

This case-controlled study involved recruiting 100 British clients with at least one periodontal problem depth of 5.5 mm. Groups were matched for age and sex. Clients responded to a questionnaire detailing clinical, behavioural and demographic data, and offering 43 choices of life events within the last 12 months. Respondents were asked to indicate the level of impact they felt the events had on their lives. The impact of the event on a client's life were classified as positive, negative or neutral. Clinical indices included plaque levels, pocket presence and missing teeth. Behavioural data included frequency of toothbrushing, whether the client regularly sought professional dental services, and whether the client smoked. Demographic data requested details of age, sex, employment and marital status, ethnicity, education level and social class. Forty-three percent of the study group indicated that they had experienced 1-5 life events, 49 percent 6-10 events and 18 percent reported experiencing 11 or more events. Participants more often reported negative life events had a grater impact on their lives.

The results of the study supported the thesis that there was a significant link between psychosocial factors and periodontitis. The association between periodontitis and life events was significant when comparing the disease involvement with missing teeth and marital status (married/single status was of less significance than the quality of the marriage). Further, levels of plaque (as expected)

and tobacco smoking were also related to the incidence of periodontitis. There was a clear link between unemployment and risk-related tobacco use and poor oral hygiene, as well as periodontitis. After statistical adjustment, social class and education level were less significant.

The authors pointed out an interesting new finding. While negative life events exacerbated periodontitis, positive life events were associated with improved periodontal health. The researchers speculate that positive events may serve as a protective mechanism in periodontal health and that those clients with more negative than positive life events are more likely to develop periodontitis. The article suggests that by pinpointing the life event that, in the client's view, had the greatest negative impact on his/her life, scientists may be able to link the event with the tipping of the balance, insofar as the impact on episodes of periodontal disease flare-up. Causality was not concluded, but the authors support that it is "more likely that life-events cause periodontitis than the contrary". Researchers suspect that stressors trigger physiologic responses that weaken a client's immune system, and thus disease resisting capacities.

This study supported the correlative relationship between life events and periodontitis. The authors indicated that longitudinal studies are required to try to determine if a causal relationship exists between periodontitis and life events.



Featuring Anne Bosy, RDH, M.Sc., M.Ed. and Penny Freedom, RDH

Smile Salon



"After over thirty years of providing care and concern to wonderful clients in other hygiene practices, I am endeavouring to lead the way into the year 2000 with an even more human approach. We have developed a wonderful salon atmosphere, a comfortable, non-threatening environment, with a focus on whiter teeth and fresh breath. My investment in computerized equipment and laser technology is aimed at society's demand for instant gratification and accessibility. I want to offer the ultimate in convenience and results!"

Following graduation from the University of Toronto, Penny spent several years in the Dental Department at the then Ontario Crippled Children's Centre. This supportive environment for many years led the way in applying a philosophy of dental hygiene relative to total patient health. While raising her son Jonathan as a single parent, Penny says "I was sustained both financially, and emotionally as a caregiver by dental hygiene; I was inspired by continuing study at the University of Toronto; and real estate investments and rental provided me with business experience as well as income. But, there was always a yearning for more and wider business experiences."

The last ten years have been dedicated to Dentistry Asleep under the leadership of Dr. Steven Small. The dental anesthesia practiced in this setting has helped alleviate the apprehensions of thousands of patients, while providing the service in exceptional, world-class surroundings.

"Smile Salon" was a natural evolution from Dentistry Asleep, modeled as it was after the "salon" concept. By taking beauty treatments such as having a brilliant white smile and fresh breath out of the dental office and into a sophisticated salon, they have been made as accessible as the perfect hair style and beautiful nails.

As Penny comments, "While some dentists offer these services—though not as the primary focus of their business—my Smile Salon eliminates the need for a dental practice setting for these services. After all, dentists must use their extensive training and equipment on the practice of dentistry—whitening teeth and freshening breath cannot be their priority. It is mine!"

Penny and her Smile Salon have a symbiotic relationship with the dental profession. For her, as with all professionals, the client's check-up and periodontal health is a priority. Step one is always the recommendation that the client take a visit to their favourite dentist and hygienist!

Smile Salon has installed the latest technology for its services. The use of laser light to accelerate tooth-whitening materials means this service can now be offered in one appointment, rather than dozens of messy home applications over twenty or thirty days, as in the past. Computerized breath analysis and study now make fresh breath a predictable service. The Smile Salon also offers a "Perfect Polish" to tune up a smile for that special event in between dental visits.

Smile Salon is in a beautiful setting in the heart of Toronto's Yorkville district. You can join the numerous clients and callers who drop in to see the salon and their range of oral health products, "tooth fairy pillows" and dolls, and exclusive toothbrushes from Europe and New York. "Watch for us on City-Line!" Penny reminds us.

In her leisure time Penny loves jogging and biking. Her husband is the Head of Cardiology at the Hospital For Sick Children and her son is studying Law at Queens University.

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The Fresh Breath Clinic



Anne Bosy,
RDH, M.Sc., M.Ed.

In reflection over career patterns of a lifetime, dental hygiene as a professional career has been a satisfying choice, providing flexibility and variety. This choice of profession has provided me with opportunities to practice in a clinical setting as a hygienist, to be an administrator in a public health program in the Caribbean, to become an educator, and now try yet another venture, a treatment centre for oral malodour.

As a faculty member at George Brown College, my work is always interesting and different. Although teaching is a satisfying pursuit, course design and preparation of course manuals have always been of interest to me as well. It was a natural flow of events that led me to developing dental assisting and dental hygiene courses using the modular approach. Of great satisfaction to myself was the design, development and implementation of the Restorative Dental Hygiene Program or as it used to be called, the Expanded Duty Dental Hygiene Program.

Design and implementation of a Computer-Assisted Testing System for independent course study took a few years and inspired me to complete a Masters in Education in the area of computer-assisted learning. As the system operated successfully, we made presentations on the subject all over Ontario. As an offshoot of this work, an opportunity to be involved as a consultant to the Adult Basic Literacy Programs of Ontario presented itself. This work gave me insight into writing in clear language, as well as valuable experience in using computer conferencing systems as a medium of communication. It was during this time that the idea of forming a clinic for the treatment of oral malodour presented itself.

The Fresh Breath Clinic™ has been in operation since 1993. When the Halitosis Assessment Clinic at the University of Toronto closed in the spring of that year, many former clients were left without a clinical facility to treat their problem. Dr. Julian Geller and myself developed the Fresh Breath Clinic to maintain an opportunity of service for those individuals who had been clients at the University, as well as to provide a clinical setting for people who were seeking oral malodour treatment.

In September, 1993, we rented a dental office for one-half day a week to assess and treat oral malodour. In 1997, we have a facility that is open five days a week and offers services to Canadian and international clients.

In looking back, it is curious how all this came about. Career changes are a part of life that sometimes come unexpectedly. Involvement in oral malodour came as a surprise even to myself. An unexpected call to work on a research project at the Faculty of Dentistry introduced me to the whole concept of oral malodour. Dr. Mel Rosenberg, a microbiologist, was investigating the efficiency of the sulphide monitor as a test for sulphur content in mouth air. For this purpose we had to have subjects who had measurable sulphur odours. An advertisement for subjects brought hundreds of calls and along with them, my introduction to the problem of bad breath.

The desperation of those that were afflicted by the problem and the fact that its prevalence appeared to be of epidemic proportions affected me greatly. The need for research and clinical studies in this area was obvious. Since academic leave was available from George Brown College where I was a faculty member, I undertook to complete a Master of Science degree specializing in oral malodour. My supervisors, Dr. Mel Rosenberg and Dr. Chris McCulloch, were patient and knowledgeable and to them I owe much of my background in this area.

The Fresh Breath Clinic™ is now in its fourth year of operation and has opened a facility in Thunder Bay. The clinic has attracted individuals with oral malodour problems from all walks of life. The service provided consists of an analysis of the problem using such aids as the halimeter, microbiological tests and location of the problem by organoleptic means. Lately, we have come to realize that the immune system plays a major role in the problem. Not only does the research literature point to the fact that there can be deficiencies in the immunoglobulins that control the hierarchy of oral bacteria, but our tests show a large number of white blood cells in the microbiological samples. Further, it appears that the stress factor complicates the situation. We are actively looking at further non-invasive testing that can give us the information that we need to help our clients. I firmly believe that

a lifetime of chemical rinsing is not the solution to the problem. The philosophy of our clinic is to be dynamic in our approach to the resolution of the problem, incorporating new methods as we discover or develop them.

The staff at the clinic consists of an office manager, registered dietitian, two part-time hygienists, Dr. Geller and myself. We have found that diet plays a major role, not in bad breath, but in the ability of the individual to effectively organize their day-to-day living. It is the role of the dietitian to detect problems and direct changes that would increase the individual's energy and decrease the stress level. To this end, it has proved a valuable and effective tool in our clinic's operation.

Perhaps one of the greatest rewards of the clinical operation is the satisfaction that we have from our successes. We see a change in the image and ego state of these people that is, at times, quite dramatic. This helps greatly to offset some of the difficulties and frustrations that we experience in this work, especially when, with all our skills and knowledge, we cannot fully address the problems presented to us. Although we can claim an 85-90 percent success rate, I look forward to the time that this can be improved.

Overall, the Fresh Breath Clinic™ as a unique facility, totally devoted to the treatment of oral malodour, has earned a track record of the highest calibre. The facility will continue to improve and grow in keeping with our goal of providing the most effective service possible for this debilitating condition.

Anne Bosy received her diploma in dental hygiene from the University of Toronto in 1956. She completed a Bachelor of Science in 1983, a Master of Science in 1993, and a Master of Education, all from the same university. She is a life member of the ODHA for her work in facilitating legislative changes in Ontario. She is also a recipient of a Certificate of Appreciation from the CDHA for her work in national dental hygiene legislation. A faculty member at George Brown College since 1976, she has taught courses in Denturism, Dental Hygiene, Restorative Dental Hygiene and Dental Assisting programs. Much of her focus has been on design and development of courses. These included development of modular, self-paced learning courses in Allied Health, as well as a format for courses by distance education. She has presented on oral malodour in Belgium, Holland, Israel, the U.S. and Canada. She has published articles in international journals as well as the popular press and has been a guest on shows such as "Doctor on Call", "Breakfast Television" and "Marketplace". Recently she authored a brochure *Five Steps to Fresher Breath* distributed by Colgate.

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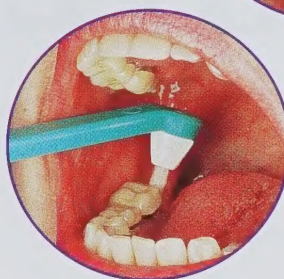
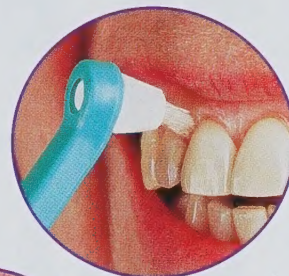
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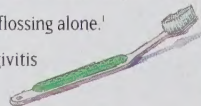


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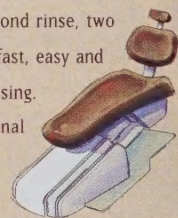
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* Gingivitis was evaluated using the Modified Gingival Index. *TM Warner-Lambert Company/WarnerWellcome Inc. use Scarborough, Ontario M1L 2N3.

1. Overholser CD et al. Comparative effects of two chemotherapeutic mouthrinses on the development of supragingival dental plaque and gingivitis. J Clin Periodontol 1990;17:575-579.

2. Data on file, 1995.

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The Canadian Dental Hygienists Association

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September/October 1997 vol. 31 no. 5

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Membership Has Its Privileges

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CDHA President Judy Clarke with dental hygienists from NW USA at ADHA Annual June Session.

October is membership month for CDHA, and whether you are an existing member or considering becoming a new member, you may be asking yourself a number of questions such as "Am I getting value for my \$100 membership fee?" or "How does being a member of CDHA benefit me?" In today's economy where, for many, household budgets are tight, both of these are fair questions. In an effort to broaden members' awareness of what exactly CDHA does on their behalf, over the past year we have been distributing a series of insert cards which list briefly some of the benefits of being a member. With eye-catching pictures and phrases, the cards focus on how your membership fee is "The hardest working \$100 you can spend on your career". I can honestly say that until I became a member of Executive Council, I was quite unaware how much CDHA does for dental hygienists across the country. As I have become more involved, it has become very apparent to me that membership in CDHA has many unique privileges which, when pointed out, will make answering the above questions much easier. Some may say they can't afford it, but I ask you, can you afford not to.

Since its inception in 1964, CDHA has been and continues to be a member-driven organization. Our mission statement, which has essentially remained unchanged since it was created, emphasizes member welfare: "The mission of the CDHA is... to maintain the interests of the dental hygiene profession". Our Board of Directors, who are responsible for the creation, development and implementation of all association projects, is comprised entirely of practicing member dental hygienists from all types of practice settings and educational backgrounds (from diploma to Ph.D. candidates). These individuals volunteer their time and expertise to contribute to the growth of our profession. As members of the association whose funding comes principally from membership dues, the Board has a vested interest in its actions and, is at all times, very cognizant of this responsibility.

Membership in anything, be it a professional association or a fitness club, has both tangible and intangible benefits. Tangible benefits are those which more directly serve the individual hygienist as they can be readily accessed and identified by the members. CDHA has worked hard to create a comprehensive range of personal member benefits which include (but are not limited to) the *Probe* and *Explorer* publications, malpractice insurance (which is especially useful in the self-regulating provinces), the Canadian Dental Hygienist Insurance program (which provides access to life and/or own-occupation disability insurance as well as car and home insurance) and group retirement savings plan. In addition, CDHA also offers Research and Graduate Student Awards, Student Scholarships, Annual Professional Conferences, and a member resource centre at our Central Office. These member benefits, while extremely important, however are only part of the parcel—CDHA membership also provides many broader, intangible benefits whose main objective is to strengthen our profession in general.

Right now, CDHA is at a pivotal point in its growth and development—now, more than ever before, we must be proactive and ready to address the numerous issues and related challenges that are inundating us at a rapid rate. It is within this context, that the intangible benefits of CDHA membership come into play.

Over the past 34 years, CDHA has achieved a number of significant accomplishments that have collectively contributed toward the professionalization of dental hygiene. These have included the development of a number of important visionary documents that are relevant today and will continue to be in the future—they include the "Position Statement on the Management of Dental Hygiene Care", *Dental Hygiene: Definition and Scope* (practice standards), *Code of Ethics* and a "Vision Statement". Other CDHA initiatives which have also contributed to our professional maturation have focused in the areas of self-regulation (provide mentoring assistance and grants to provinces seeking self-regulation), support for dental hygienists seeking employment in alternative settings (but not forgetting those in traditional settings), and alliances with other health professions, to name a few.

Membership Has Its Privileges... (continued on page 175)

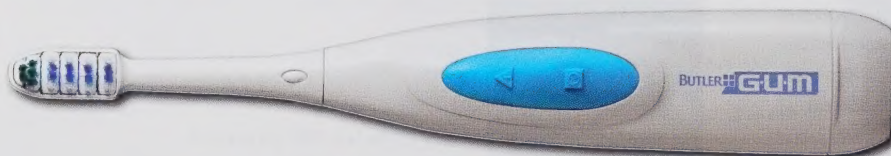


Judy Clarke is a 1987 graduate of the University of Alberta Dental Hygiene Program. She has worked full-time in private practice over the past ten years and continues to do so in Edmonton Alberta.

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Watch for Highlights of the Ottawa Conference in the November/December 1997 Issue



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Radiography/Radiology
Prepared by: Harriet McCabe, Dip.D.H., B.Sc.D.(D.H.)

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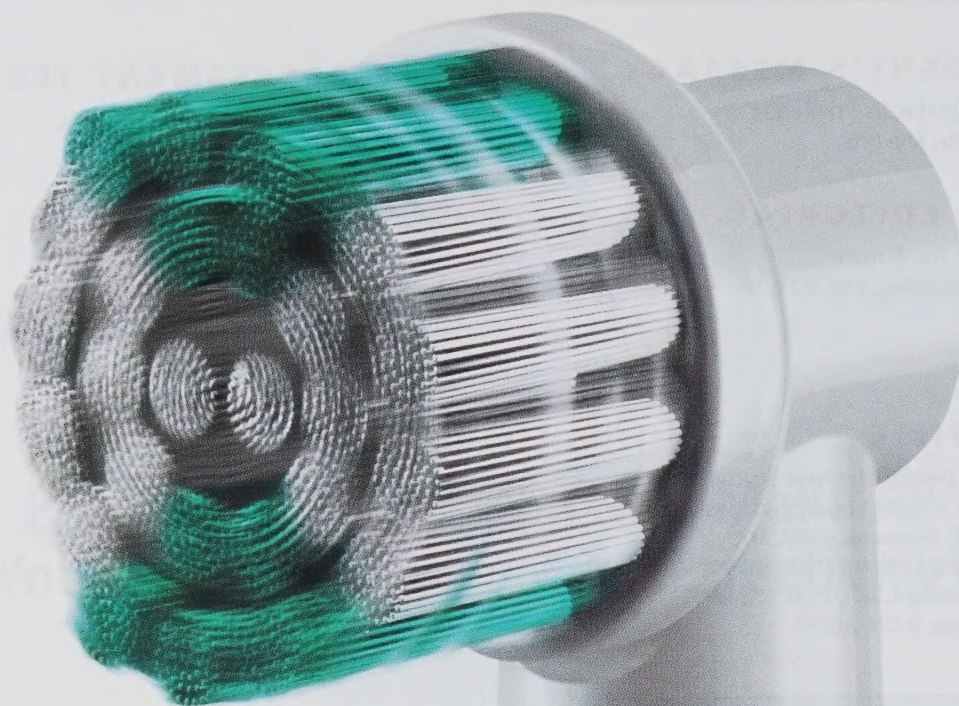
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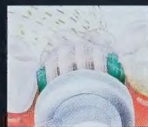
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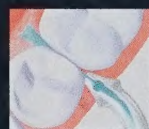
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Our Bid For the Future

Each year the CDHA conference infuses me with energy and renewed promise for the future of the profession. I come away knowing that my chosen livelihood is healthy and thriving and well-positioned to continue its thrust into the future.

After the most recent 10th annual convention in Ottawa I have found myself, for the first time in my 20-year career, concerned for the future of the profession. Our leaders are still visionary and our path is still set on fast forward—our councils are strong and our members committed, and we have pioneers in the trenches forging new pathways who are urging others to join them in force as they lead the way. So why the need to take stock? Circumstances this year placed me in a unique position, when, in a concentrated period of time, I found myself working simultaneously in the business world of biomaterials and the research arena of periodontics, as well as travelling the country speaking to many people in the dental hygiene profession.

What I see is a vortex of change with several key factors as part of the spin. The first is the unprecedented clawback of research funding, especially in this country. Basic research in Canada is certainly going to suffer and it seems clear that we will come to rely more and more on the large NIH grants in the United States to investigate critical areas such as genetic mapping and human host response.

This loss of funding is finally forcing researchers to look to partners in industry for the dollars necessary to continue their work. Naturally industry cannot fund basic science, but must target research dollars on issues of common interest or products of common need and usage. Woe to those researchers who believe industry to be evil stepmothers with deep pockets and ulterior motives. Accolades to those in science who see scientific partnership as being a sound and strong means to an end; bringing the benefits to the people. Perhaps penicillin would not have been shelved with the university fathers had there been industry partners to get the product out in the hands of the physicians. What was the cost in lives prior to it reaching the market?

The second phenomena I see is the change to the profession happening as a result of scientific advancement. More specific diagnostics and therapeutics are eliminating some specialties within dentistry and creating new ones. If we thought fluoride was effective in producing a decline in the operative field, just wait until some of the new calcium phosphate findings hit the market! Products such as Enamelon™ may prove effective in actually “healing” the beginnings of tooth destruction; operative specialties may truly be relegated to the world’s developing countries.

What is happening is the creation of new specialties. We have lived through the birth and maturity of implantology, the growing pains of guided tissue regeneration, and are now in the emerging adolescence

of cosmetic dentistry. Preventive research has grown to include potential new periodontal therapies which will soon make their way into Canada. This places responsibility on regulatory bodies and government ministries to make decisions on how these services are accessed, in what manner and by whom.

The third cog in the wheel of change is the consumer. The baby boomers, an educated and demanding group, have proved unwilling to accept the traditional approach of old-style health service professionals—the “do what I tell you because I know best” approach. They want information, and they require the development of a relationship of trust and care with their health care professionals. They know what they want, and they have the resources to purchase their health care choices. As this population ages, with the new technology available they will demand elective cosmetic dental care to “enhance” what’s already there!

Therein lies a potential dilemmas of dental hygiene. We have no problem in the altruistic practice of providing necessary care for the elderly or utilizing our skills as clinicians capable of relieving pain with local anesthesia. We are getting out and serving the underprivileged and providing oral health care to even out the balance of services. We pride ourselves on being in a caring profession with public support and feel good about our chosen directions. But wait—let’s take a closer look before we pat ourselves too firmly on the back. We are the same profession that supports the public’s right to informed consent. If that client in your chair has the right to know about reversing that periodontal disease, then he or she also has the right to know about eliminating that diastema as well. Clients have the right to psychological health by elimination of oral anomalies just as much as they have a right to physical or dental health by elimination or control of any disease. We cannot decide just what is required for their psychological well-being—they get to choose that too!

So while dental hygiene guards itself, and the public, against “unnecessary” elective services and focuses on the therapy and rehabilitation of the undeserved we may effectively be cutting ourselves out of retaining a position on the new playing field. In order for dental hygienists to be able to act as caregivers in any of our necessary roles we must be willing to serve *all* of the needs of *all* of the people, not just the ones that make us feel good!

Dr. Sutherland phrased this well at the conference. He told us that he has watched nursing deal itself a poor hand, losing power in the delivery of medical services by its “need to be loved” by the people. How can the people benefit from a full range of nursing services unless nursing protects its profession and its commitment to serve the people by being informed and by being tough in its fight to retain its position in the health care game?

Our Bid For the Future... (continued on page 175)

Cline Introduces Self Regulation for Dental Hygienists Working in Saskatchewan

In introducing the *Dental Disciplines Act* in the legislature in April, Provincial Health Minister Eric Cline announced several changes to regulation in the dental health field that should make preventive dental care more accessible in the province.

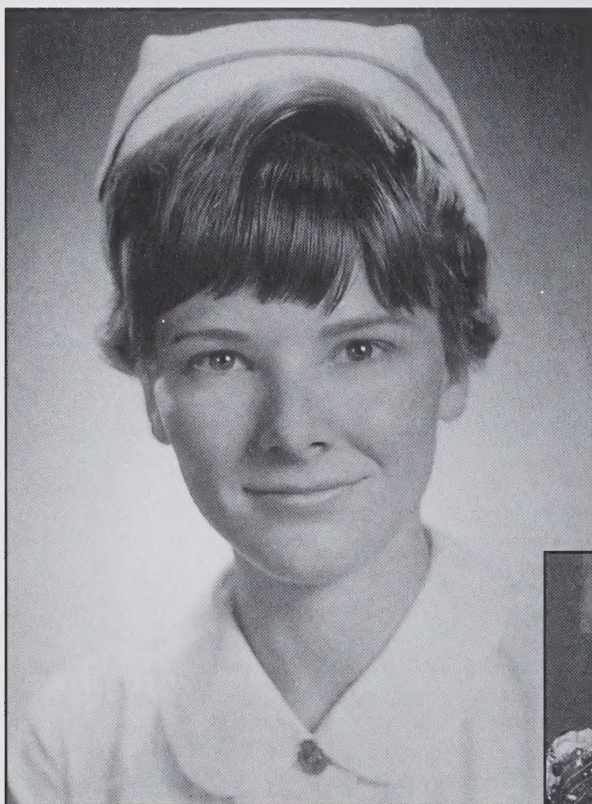
The new legislation will allow dental therapists, hygienists and assistants to work for health organizations in facilities such as nursing homes and health centres. It also combines all six dental-related professions—dentists, therapists, hygienists, assistants, denturists and dental technicians—under one piece of legislation. “A key feature is that therapists, hygienists and dental assistants

can practice in numerous public settings without direct supervision of a dentist, for example at a special care home,” Health Department spokesman Roy Schneider said.

The new statute expands the discipline process and introduces public accountability provisions that include, holding open disciplinary hearings, appointing members of the public to each profession’s governing board and filing an annual report to the health minister. It also allows the Dental Hygiene and Dental Assisting professions to regulate their own members, instead of regulation through the College of Dental Surgeons.

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Ms. Barbara Hewton—Life Member



Barbara Hewton upon graduation

Barbara Hewton was awarded life membership of the CDHA at the National Conference in Ottawa in June. She has been continuous member of the Canadian Dental Hygienists Association for well over 25 years and has been involved in dental hygiene at a national level in various positions since 1970.

CDHA has truly benefited from her attention to detail—she has spent several hours ensuring the accuracy of the board books and other documentation. She has served on numerous ad-hoc committees and board councils. Barbara is a bottomless resource of information about past and present CDHA activities. She is always up-to-date on all aspects of the profession and has the innate ability to assess correctly the trends that will affect dental hygiene in Canada.

Barbara has generously shared her knowledge and expertise with dental hygiene professionals and the public alike. Everyone who has worked with Barbara has been influenced by her dedication and commitment

to the dental hygiene profession. Her enthusiasm for the profession is contagious. She has been both a mentor and a role model for many people. Her extensive curriculum vitae shows her personal involvement in the promotion of the profession of dental hygiene at the local, provincial and national levels. Her participation at all levels of the profession has been unending and she has given unselfishly of her time.



Barbara Hewton accepting award at Awards Luncheon, Ottawa Conference

Darlene Thomas New Vice President for CDHA



Darlene Thomas graduated in Dental Hygiene from the University of Alberta in 1964. She has worked in private practice, public health and was an assistant professor at the University of Alberta.

Darlene has devoted many years to the professional development of dental hygiene as President of the Alberta and British Columbia Central Hygienists Association as

well as President of her local component society. On the national level Darlene was a Director of CDHA and a member of the Regulatory Council where she was involved in the restructuring of CDHA at that time.

Darlene held two terms representing dental hygienists on the British Columbia College of Dental Surgeons Council. Her second term was involved in the restructuring of the British Columbia Dental College which saw the development of a Regulatory Quorum of Council where Dental Hygiene held two voting positions. During this time British Columbia was pursuing self regulation for Dental hygiene.

In March 1995 the practice of Dental Hygiene in British Columbia became regulated by the College of Dental Hygienists of British Columbia under authority of the Health Professions Act and the Dental Hygienists regulation. Darlene was appointed by the Minister of Health as a director and subsequently was elected as the first Chair of the Board. Darlene has been a Director and Chair of the College

of Dental Hygienists of British Columbia for two years and now is in her final year as director. As a board member, Darlene is also a member of the Inquiry Committee and Legislation Committee of the College of Dental Hygienists.

In December 1996, Darlene was appointed by the Minister of Health as a director to the North Okanagan Regional Health Board for two years period. She is also on the Executive Committee of the Board.

Darlene's community activities include working with the Canadian Cancer Society and the Breast Survivor Program.

To balance her life Darlene enjoys her fitness club, walking her grand-dog and listening to music. Her home in Vernon, British Columbia also allows her good access to an occasional round of golf and skiing at Silver Star Mountain.

Darlene continues to work in private practice where she has been for 18 years. She is acutely aware of the team approach necessary for the delivery of health care to the public. Networking and being involved inside and outside of the dental community is a very positive way of promoting and enhancing the dental hygiene profession.

Darlene has been married for 32 years and is the mother of a son who is just starting his career and a daughter who is in her final year at University and will be starting her career next year.

Darlene looks forward to working with CDHA over the next few years to help direct the growth and professional development of Dental Hygiene into the year 2000.

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CDHA/Colgate Community Health Award

The CDHA, in conjunction with Colgate Oral Pharmaceuticals, has established the CDHA/Colgate Community Health Award.

This program supports dental hygienists, be they individuals, groups or components, engaged in community health projects that promote oral health and wellness.

A single award of \$3,000 is made annually to Canadian dental hygienists who present a new community health initiative. The project must be carried out in Canada and not directly associated with a publicly-funded dental health program. Preference will be given to community projects that are relevant to the discipline of dental hygiene and the mission and objectives of the CDHA. National Dental Hygiene Week projects/initiatives are not acceptable for this award.

Award applicants must be Canadian dental hygienists who are life-members or active members in good standing of the CDHA.

The deadline for applications is **December 15, 1997.**

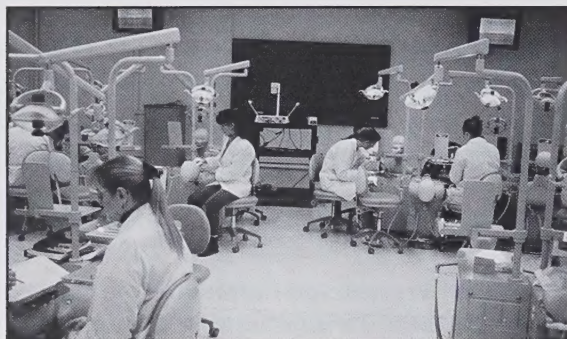
The award recipient/s will have one year to implement the project from the date of notification. At the end of the first year a report must be submitted to CDHA. A successful applicant may re-apply for a second consecutive year. Second applications will be considered on the same basis as any first applications. No more than two awards will be offered for any one initiative.

For more information or to receive an application form, contact:

Canadian Dental Hygienists Association
96 Centrepoin Drive
Nepean, Ontario
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Phone: (613) 224-5515
Fax: (613) 224-7283

A Positive Change in Dental Hygiene Education at Fanshawe College

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Dental Hygiene students at work in Simulation Clinic

The Dental Hygiene Program at Fanshawe College, in London, Ontario, has embarked on a new approach in the delivery of dental hygiene education. During the 1996-97 academic year, as a result of a joint effort between the Dental Hygiene Program and the Faculty of Dentistry at the University of Western Ontario (U.W.O.), the Program and Faculty agreed to share clinical and pre-clinical facilities. This has enabled students in both programs to work and learn together to deliver comprehensive dental hygiene and dental care to clients.

Prior to starting the clinical component of their program, the dental hygiene students learned and practiced pre-clinical dental hygiene theory in U.W.O.'s new "Simulation Clinic". This state-of-the-art facility enables students to practice instrumentation and positioning concepts using the realistic mechanics of each unit of the Simulation Clinic—essentially, to work in an environment that is very close to "the real thing". The facility, which was opened by the Faculty of Dentistry in September of 1995, has 50 units that were designed and built to their specifications. Each unit comprises a fully adjustable manikin, front delivery suction, triple syringe, handpiece attachments, and instrument tray, as well as a dental light. Dental forms for a variety of procedures are easily snapped into the unit.

A further tool of instruction in the Simulation Clinic are demonstrations using an ELMO Visual Presenter, which allows for projection onto four ceiling-mounted monitors. For example, a discussion on instrument design was facilitated by high magnification of instruments onto these monitors and demonstrations of approaches to instrumentation were projected onto the monitors. Unfortunately, the quality of these demonstrations varied, hinging as they do on the abilities of the person operating the video camera, rather than the person handling the instrument! Additional practice by the professors involved—we are dental hygienists after all, not videographers—should improve the quality of

these demonstrations in the future. Dental hygiene students and faculty alike were thrilled and excited by this new environment, and believe that the transition from manikin to live clients was made easier as a result.

Also new to the program this year has been the change in venue for the dental hygiene clinic. Students now provide dental hygiene treatment from the 100-cubicle dental clinic at U.W.O., allowing for the development of a common body of patients receiving both dental and dental hygiene treatments from the same source. Future plans include improved collaboration and treatment planning between dental hygiene and dental students to ensure comprehensive and holistic care for all clients, as well as the development of an increased appreciation for the student's respective roles.



Dawn Douglas, a Dental Hygiene student from Fanshawe College, at work on a cooperative "client".

This past academic year has been a year of change for students and faculty alike. Students demonstrated their resilience and cooperation as many wrinkles were ironed out as the year progressed. Faculty and staff from both teaching institutions rose to the challenge presented to them and demonstrated that change can be stimulating and rewarding when handled with patience and dedication. The efforts and vision of all involved have been greatly appreciated! It is hoped that

this endeavour will be continued and developed, to provide even better prepared graduates in dental hygiene in years to come.

Helen Symonds graduated from Seneca College with a Diploma in Dental Hygiene in 1984. She has been the Coordinator of the Dental Hygiene Program at Fanshawe College for the last three years, and a full-time professor for two years prior to that. Her teaching focus has been in the areas of Preventive Dentistry, and Pre-Clinical and Clinical Dental Hygiene.

She has worked as a dental hygienist in a variety of settings, including general practice, orthodontics, and paedodontics. The flexibility associated with the dental hygiene profession (as well as the support of other dental hygienists and an understanding husband!) has allowed her to pursue many personal goals. Not least of these was her decision to return to university full-time to obtain her BSc, while working in the summers as a dental hygienist. In 1992 she received a Bachelor of Science Degree with a major in chemistry from the University of Western Ontario.

Dental and Dental Hygiene Students' Attitudes in a Joint Local Anesthesia Course

Abstract

In 1995, the local anesthesia course was combined for dental and dental hygiene students. It was also the first time that dental hygiene students were instructed clinically in local anesthetic techniques. Faculty felt it important to evaluate student attitudes regarding these curriculum changes. This study assessed students' perceptions of the adequacy of background preparation courses, concerns about administering local anesthetics and attitudes about its administration by dental hygienists.

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A pre/post survey was completed by dental and dental hygiene students. T-tests were used to determine if differences in attitudes existed between groups and if changes in attitudes occurred within groups after taking the course. Results indicated that both groups believed they had adequate background preparation. Apprehensions about administering local anesthetics were similar, but the dental hygiene students felt significantly less anxiety ($p < 0.01$). Results also differed significantly on the issue of hygienists administering local anesthetics, with hygiene students in support of it and dental students opposed ($p < 0.01$).

Results confirmed that no changes were needed in the existing prerequisite courses for both groups. A need to address student anxiety about local anesthetic administration has been identified. In addition, it may be beneficial to expand dental students' appreciation of dental hygiene education to foster mutually successful working relationships in the future.

Introduction

In 23 out of 50 states, administration of local anesthetic injections by qualified dental hygienists is permitted by the state dental practice acts.¹ Local anesthetic administration by dental hygienists was first legalized in Washington state in 1971² and in 1997, Maine became the newest state to modify its practice act to include this service.¹ In addition, dental hygienists in the United Kingdom³ as well as two Canadian provinces are permitted by law to administer local anesthetics.⁴ Since 1971, when dental hygienists first began to administer local anaesthetics, no reports of adverse patient reactions have been documented.⁵

Causing patients pain or discomfort was identified as a major cause of stress in 97.8% of a sample of 238 dentists,⁶ and other studies identified the injection procedure itself as a definite stressor.^{7, 8} To relieve stress, some dentists in the earlier study chose to delegate local anesthetic administration to their dental hygienists.⁸

Anesthesiology Course Components

Because local anesthesia techniques have not traditionally been a part of the dental hygiene curriculum, state boards of dentistry have established various requirements for dental hygienists wishing to become qualified to administer local anesthetics.^{5, 9, 10}

For example, Arkansas dentists felt that a four-day course should be the minimum length for a continuing education course for dental hygienists in local anesthesia techniques.¹¹ Colorado requires a 24-hour course for dental hygienists to become qualified to administer local anesthetics.⁹ In the United Kingdom, a one-day course and 10 supervised injections enable a dental hygienist to become qualified.³

Dental hygiene programs that include local anesthetic techniques in the curriculum also have varying hours and requirements. Dental hygiene students in an anesthesiology course at the University of Iowa had a total of 27 lecture and laboratory

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Dental and Dental Hygiene Students'
Attitudes in a Joint Local Anesthesia Course

hours.¹² An experimental advanced skills course at Forsyth had initially proposed 20 hours for instruction and practice in local anesthesia techniques, but found that 9 hours were sufficient.¹³

In addition to course length, course content is also a consideration. Anesthesiology courses generally include anatomy, physiology, pharmacology, local and systemic complications and technique.^{3, 4, 11, 12, 14, 15} Courses in anatomy, physiology, pharmacology and medical emergencies are generally prerequisites for the local anesthesia course.^{3, 12-15}

Combined Local Anesthesia Course

No mention of combined courses for dental and dental hygiene students could be found in the literature. The combined course at Baylor College of Dentistry may be the first of its kind, and it was the first time that Baylor dental hygiene students were instructed to clinical competence in local anesthesia techniques. Students enrolled in this course were second-year dental students and senior (second-year) dental hygiene students.

The course provided 10 hours of lecture by an oral surgery faculty member and an optional hour of videotape instruction. The dental students participated in one, three-hour laboratory session on injection techniques with classmates, while the dental hygiene students had two, three-hour laboratory sessions with a partner.

Anesthesiology was included in the dental hygiene curriculum at this time for two reasons. In drafting the *Competencies for the Dental Hygienist*,¹⁶ a document emphasizing outcomes assessment, it was decided to include the following two foundational competencies:

"... the dental hygienist must control pain and anxiety during treatment through the use of accepted clinical techniques and appropriate behavioral management strategies" and,

"... the dental hygienist must provide adjunct dental hygiene services that can be legally performed in any state in which the dental hygienist practices."

Secondly, Texas joined the Western Regional Examining Board in 1994, and is the only member state out of 10 having a dental practice act restricting local anesthetic administration solely to dentists. Faculty wanted to ensure that the dental hygiene graduates would be prepared to take and pass the local anesthesia exam and be able to apply for local anesthesia certification in any WREB member state.

Faculty also felt the need to assess student attitudes regarding these major curriculum changes. Therefore, the purpose of this study was to assess both dental and dental hygiene students' perceptions of their background preparation, concerns about administering local anesthetics, and attitudes about a change in the *Dental Practice Act* that would permit local anesthetic administration by dental hygienists.

Methods

A pre- and post-course survey (Fig. 1) was developed. The pre-course survey was completed voluntarily prior to the start of the course by both student groups, and the post-course survey was completed following the course.

One survey item assessed students' perception of adequacy of background preparation, and another item assessed attitudes on changing the *Dental Practice Act*. The remaining three items addressed students' concerns about the administration of local anesthetics. Students rated all statements on a five-point Likert scale with choices ranging from "strongly agree" to "strongly disagree".

Data Collection and Analysis

Data were tabulated using means and frequency distributions. T-tests ($\alpha=0.01$) were used to determine if overall differences in attitudes existed between dental and dental hygiene student groups. Pre- and post-survey data for each student group were combined and the means compared to determine if overall differences in students' ratings occurred between groups. Pre survey data for dental and dental hygiene students and post survey data for the same groups were also compared. Changes occurring within groups before and after taking the course were examined by comparing the pre-course means for each survey item with the post-course means. "Agree" and "Strongly agree" responses were combined and recorded as the overall percentage of students agreeing with the survey statement.

Results

The pre-course survey response rate was 87% ($n=76$) for dental students and 100% ($n=19$) for dental hygiene students, while the post-survey response rate was 62% ($n=54$) and 89% ($n=17$) respectively.

Results indicated that both groups believed they had adequate background preparation (item 1, Tables I and II). The increase in the scores for dental hygiene students was statistically significant, while there was no overall significant difference between dental and dental hygiene student groups regarding their perceptions of preparedness (item 1, Tables I and III).

Concerns about administering local anesthetics (items 2,3,4) were present for a minority of both groups of students, but decreased significantly for dental hygiene students in all areas after taking the course (Tables I and II). Concerns about causing discomfort (item 2) also decreased significantly for dental students after taking the course, but there were no significant changes noted with regard to causing harm or having a medical emergency (Table II). Dental and dental hygiene students differed significantly on their concerns about causing harm to patients and on having a medical emergency occur (items 3 and 4, Table III). Apprehensions on these two variables were similar, but the dental hygiene students felt significantly less anxiety about these potential problems than the dental students (Table III).

After taking the combined course, students' attitudes did not change in regard to whether dental hygienists should administer local anesthetics (item 5, Tables I and II). There was, however, a significant difference between groups, with dental hygiene students strongly in favour of the practice and dental students strongly opposed (item 5, Table III). This result was also true when pre survey results of both groups and post survey results were compared.

Directions:

For each statement, indicate the extent to which you agree or disagree with the statement by marking the appropriate letter on your Scantron card. If you neither agree or disagree, choose neutral (Choice C). Thank you for your input.

- A. Strongly agree
- B. Agree
- C. Neutral
- D. Disagree
- E. Strongly Disagree

☐	1. I feel that I have an adequate background and preparation to take this course and administer local anesthetics.
☐	2. I am concerned that I will cause my patient discomfort or pain.
☐	3. I am fearful that I will cause my patient harm.
☐	4. I am fearful that a medical emergency will occur after administering a local anesthetic.
☐	5. I believe that administration of local anesthetics for dental patients should be a legal service dental hygienists provide in Texas.

FIGURE 1

SURVEY OF STUDENT'S ATTITUDES TOWARDS
ADMINISTRATION OF LOCAL ANESTHESIA

TABLE I

DENTAL HYGIENE STUDENTS' ATTITUDES BEFORE AND AFTER ANESTHESIOLOGY COURSE

Variable	Pre	(N=19)	Post	(N=17)
	%+ (agree with statement)	X (average response)	%+ (agree with statement)	X (average response)
1. Have adequate background.*	58	3.473±1.124	76	4.352±0.862
2. Concerned about causing patient discomfort or pain.*	31	2.842±1.167	6	1.882±0.857
3. Concerned about causing patient harm.*	26	2.578±1.121	6	1.647±0.996
4. Concerned that a medical emergency would occur.*	16	2.526±0.841	0	1.764±0.664
5. Local anesthetic administration should be legal for dental hygienists.	79	4.105±1.370	88	4.647±0.702

* Significant differences between pre and post, $p \leq 0.01$.

5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree

+ Agree and strongly agree responses combined for % agreeing with statement.

TABLE II

DENTAL STUDENTS' ATTITUDES BEFORE AND AFTER ANESTHESIOLOGY COURSE

Variable	Pre	(N=19)	Post	(N=17)
	%+ (agree with statement)	X (average response)	%+ (agree with statement)	X (average response)
1. Have adequate background.	65	3.733±0.963	83	3.925±0.988
2. Concerned about causing patient discomfort or pain.*	43	3.105±1.206	17	2.574±0.944
3. Concerned about causing patient harm.	25	2.565±1.112	43	2.925±1.061
4. Concerned that a medical emergency would occur.	27	2.723±1.078	28	2.740±1.013
5. Local anesthetic administration should be legal for dental hygienists.	10	1.773±1.060	15	2.092±1.233

* Significant changes between pre and post, $p \leq 0.01$.

5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree

+Agree and strongly agree responses combined for % agreeing with statement.

TABLE III

DIFFERENCES BETWEEN DENTAL AND DENTAL HYGIENE STUDENTS' ATTITUDES

Variable	Dental Student	Dental Hygiene Student
	X (average response)	X (average response)
1. Have adequate background.	3.814±0.974	3.888±1.090
2. Concerned about causing patient discomfort or pain.	2.884±1.132	2.388±1.128
3. Concerned about causing patient harm.*	2.715±1.101	2.138±1.150
4. Concerned that a medical emergency would occur.*	2.730±1.048	2.166±0.845
5. Local anesthetic administration should be legal for dental hygienists.*	1.907±1.142	4.361±1.125

* Significant differences between dental and dental hygiene students, $p \leq 0.01$.

5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree

Discussion

Since this was the first time that techniques of local anesthetic administration for dental hygiene students were taught to clinical competence, faculty were interested in both dental and dental hygiene students' attitudes towards this curriculum addition in order to assess the course for future modifications. Prior to the course, some of the dental hygiene students expressed concern that the anesthesiology professor might think the dental hygiene students were not as prepared as the dental students to take this course. Some dental students expressed concerns that the dental hygiene students' background was inadequate to administer local anesthetics.

Results of this study confirm other studies regarding the adequacy of the dental hygienists' background preparation.^{3, 4, 9, 12, 13} There was a significant increase in dental hygiene students' beliefs that prerequisite courses prepared them to take the anesthesiology course with the dental students. When the dental hygiene students realized that the course was not "over their heads," they understood the relevance of their preparatory courses.

It was assumed by the investigators prior to the course that both groups of students would share similar concerns about administering local anesthetics, but that these concerns would be alleviated upon completion of the course. A minority of both dental and dental hygiene students were concerned about causing pain or discomfort to their patients, causing harm to their patients, or having a medical emergency occur. As was expected, significantly fewer students felt these concerns upon completion of the course, except for the variables of causing harm to the patient and having a medical emergency occur, which increased slightly, but not significantly, for the dental student group. One possible explanation for this could be that the dental students had not had their Medical Emergencies course prior to taking the anesthesiology course, and therefore did not feel as comfortable in preventing harm to a patient or the occurrence of a medical emergency. Another explanation could be that the dental students had not had any experience in treating patients in the clinic prior to the anesthesiology course. After the course, dental and dental hygiene students did, however, exhibit significantly more confidence in their abilities to anesthetize a patient without causing discomfort or pain.

When comparing the concerns of dental hygiene students to dental students, dental hygiene students generally felt more comfortable in their knowledge and abilities to prevent harm to patients and to prevent a medical emergency from occurring. Apprehensions on these two variables were similar, but the dental hygiene students felt significantly less anxiety about these potential problems than the dental students. The second-year dental hygiene students took the Medical Emergencies course concurrently with the anesthesiology course and had one year's experience treating patients in the clinic. In the future, it may be advisable to provide some class time for student discussions on their concerns about administering local anesthetics.

Whether dental hygienists should be delegated local anesthetic administration is controversial and beyond the scope of this

paper.^{5, 11, 12} However, since the dental and dental hygiene students were taking a combined course, and since Texas was now a member state of WREB, faculty felt it necessary to know students' attitudes about this issue in order to be prepared for any necessary curriculum changes.

Not unexpectedly, the greatest differences occurred on the issue of whether students believed that dental hygienists should be legally permitted to administer local anesthetics. Dental students were strongly opposed to this practice while dental hygiene students overwhelmingly supported it. The investigators theorized that dental students would be more likely to support the practice than older dentists in private practice for two reasons. Younger dentists in private practice have delegated local anesthetic administration to dental hygienists more than their older counterparts¹⁷ and since dental and dental hygiene students were taking the same class and exams, it was believed that the dental students would be more accepting of dental hygiene students administering local anesthetics. Since the laboratory portion of the course was not combined, a recommendation for future courses would be to include dental and dental hygiene students together as student partners. This pairing may enhance dental students' understanding of dental hygiene students' ability.

It may also be advisable to allocate some class time to discuss the need for, and status of, local anesthetic administration by dental hygienists on a national and international basis. Dental students appear to need additional information on dental hygiene students' education, background and scope of practice in order to foster a mutually successful working relationship during school and after graduation. The investigators will survey this same dental class again before graduation. It is possible that their attitudes may change after working with the hygiene students for two years.

The students' academic and clinical performance was not included in this study. However, all dental and dental hygiene students did satisfactorily pass the didactic and clinical components of the course.

Conclusions

The purpose of this study was to assess students' perceptions of their background and preparation, concerns about administering local anesthetics and attitudes about its administration by dental hygienists. Analysis of the data suggests that the students' background and preparation is adequate, though it is recommended that courses should address students' apprehensions concerning local anesthetic administration. Enhancing dental students' appreciation of the dental hygiene students' education, background and scope of practice was also identified as a priority.

With more and more state dental boards changing practice acts each year to permit dental hygienists to administer local anesthetics, it is anticipated that an increasing number of dental hygiene programs will be modifying their curricula to include this topic. Course developers may find it helpful to address some of the concerns identified in this paper to enhance students' learning and decrease students' concerns.

References

1. American Dental Hygienists' Association. "Local Anesthesia Administration State Chart." April, 1997.
2. Paarmann, C., Herzog, A. "Achieving reliable anesthesia with the inferior alveolar injection." *J Prac Hyg.* 1995, 4: 11-18.
3. Porter, S. R., Matthews, R. W., Scully, C., Midda, M., Bain, S. "Local analgesia infiltration." *Dental Health* 1992, 31: 4-6.
4. Malamed, S. F. *Handbook of Local Anesthesia*. 3rd edition, St. Louis: Mosby Year Book Inc., 1990, 241-242.
5. Sisty-LePeau, N., M., Lutjen, D. "Dental hygiene licensure specifications on pain control procedures." *J Dent Hyg.* 1990, 64: 179-85.
6. Rankin, J. A., Harris, M. B. "A comparison of stress and coping in male and female dentists." *J Dent Prac Admin.* 1990, 7: 166-72.
7. Peltier, B., Dower, J., Simon, J. F., Chambers, D. "The injection procedure as a source of stress for dentists." *Gen Dent.* 1995, 43: 564-69.
8. Simon, J. F., Peltier, B., Chambers, D., Dower, J. "Dentists troubled by the administration of anesthetic injections: Long-term stresses and effects." *Quintessence Int.* 1994, 25: 641-46.
9. Cross-Poline, G. N., Passon, J. C., Tillis, T. S., Stach, D. J. "Effectiveness of a continuing education course in local anesthesia for dental hygienists." *J Dent Hyg.* 1992, 66: 130-6.
10. American Dental Hygienists' Association. *Legislative Action Packet. ADHA practice act overview chart—permitted functions and supervision levels by state.* Chicago, ADHA, 1995.
11. Arkansas State Dental Association. "Results of Survey, Local Anesthesia Privileges for Hygienists?" *Arkansas Dentistry* 1992, 63: 27-9.
12. Sisty-LePeau, N., Henderson, W. G., Martin, J. F. "The administration of local anesthesia by dental hygiene students." *Dent Hyg.* 1986, 60: 28-32.
13. Lobene, R. R., Berman, K., Chaisson, L. B., Karelas, H. A., Nolan, L. F. "The Forsyth experiment in training of advanced skills hygienists." *J Dent Educ.* 1974, 38: 369-79.
14. Baylor College of Dentistry, Department of Oral and Maxillofacial Surgery and Pharmacology. *Pain and Anxiety 7230 Course Syllabus.* 1994-1995: 1.
15. Clitter, C. "Report on the local infiltration analgesia course at the dental auxiliary school." *Dent Hlth.* 1992, 31: 7.
16. Caruth School of Dental Hygiene and Baylor College of Dentistry. *Competencies for the dental hygienist.* Dallas, TX., CSDH, BCD, 1994.
17. Rich, S. K., Smorang, J. "Survey of 1980 California dental hygiene graduates to determine expanded-function utilization." *J Pub Hlth Dent.* 1984, 44: 22-7.

Marylou Gutmann has been a dental hygienist for 30 years. During that time she has practiced clinically in general, orthodontic and periodontal practices. She has also been an educational consultant to Dentsply and a sales representative for Johnson & Johnson Medical, Inc. She was a full-time faculty member in the Department of Dental Hygiene at the University of Maryland for 12 years. Presently she is a full-time faculty member at Baylor College of Dentistry, in the Department of Dental Hygiene, where she has worked for four years. She is also the Graduate Program Director for the MS in Dental Hygiene program at Baylor.

Ms. Gutmann received her Associate of Science degree in Dental Hygiene from the Fones School of Dental Hygiene, University of Bridgeport in Connecticut. She received her Bachelor of Science degree in Dental Hygiene and her Master of Arts degree in Education from the University of Maryland.

Research interests focus on expanding the role of dental hygienists in dental specialty practices, dental hygiene educational issues and dental materials. She was the principal investigator of a study entitled "The Clinical Effects of Air-Powder Polishing on Various Restorative Materials" funded by the Institute for Oral Health of the American Dental Hygienists' Association.

In addition to her full-time teaching responsibilities, Ms. Gutmann has also presented continuing education courses on oral health education topics, periodontics, infection control, and preventive dentistry throughout the United States and in several foreign countries. She has published several articles, book reviews and abstracts in a variety of dental, dental hygiene and educational journals. In 1995, Ms. Gutmann received the Teaching Excellence Award from the Texas Dental Hygienists' Association at the Texas Student American Dental Hygienists' Association annual meeting.

LETTER TO THE EDITOR

July 26, 1997

Dear Ms. Worobey,

At the end of my first year of Dental Hygiene studies at Camosun College Dental Programs I was honoured with the Barbara Ferris Memorial Scholarship award.

This award holds special significance for me as I had personally known Barb. We shared many similarities throughout our lives. We were both from the prairies, where we attended the University of Manitoba, and we both taught in the Red River Community College Dental Assisting Program. Barb, as was typical of her nature, consistently provided support and friendship to me.

I wish to thank all those who contributed to the Barbara Ferris Memorial Scholarship. I hope that I will be able to contribute to the Dental Hygiene profession with the dedication and quality of skill that my friend Barbara Ferris did.

Yours sincerely,
Heather Abbott
Dental Hygiene Year II Student

The Camosun College Dental Hygiene Program wishes to acknowledge the generous support of all CDHA members who year after year support the Barbara Ferris Memorial Scholarship Fund. This year the award was presented to Heather Abbott.

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The deadline for submissions of abstracts for free papers, posters and table clinics is February 3, 1997. Selection will be on the basis of the quality of abstracts. Notification of authors of accepted or rejected abstracts will be made by March 3, 1997. All selected abstracts will be published in the Conference Program.

Completed papers must be submitted by April 10, 1996 for potential publication in *Probe*, the CDHA scientific journal.

For additional information contact: CDHA Central Office, 96 CentrepoinTE Dr., Nepean, ON K2G 6B1

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Watch for the next issue of *Probe* for more information.

Friday

Dr. Elizabeth Epperley, President
University of Prince Edward Island

Dr. Linda Kraemer, Associate Dean
College of Allied Health Sciences,
Thomas Jefferson University

Dr. Kevin Lyons
Thomas Jefferson University

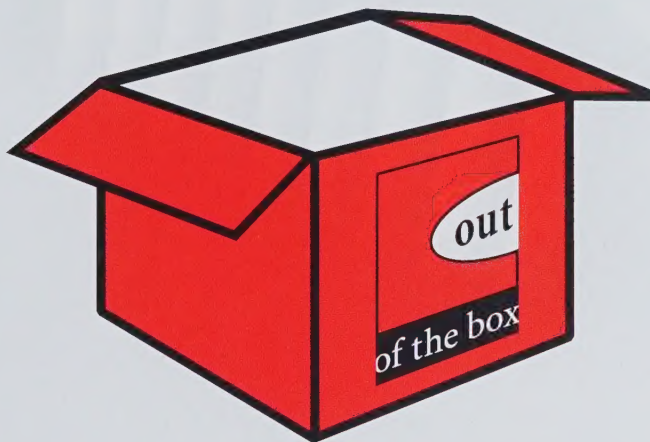


Saturday

Marilyn Kinnear, Professor
Dalhousie University
School of Dental Hygiene

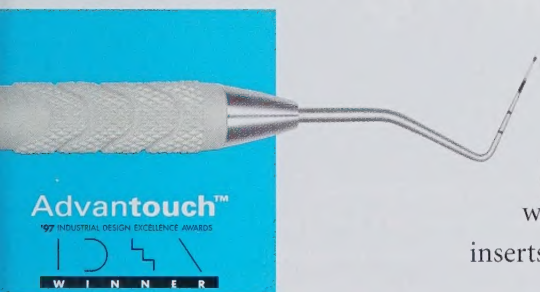
Maria MacKenzie, President
The American Dental
Hygienists Association

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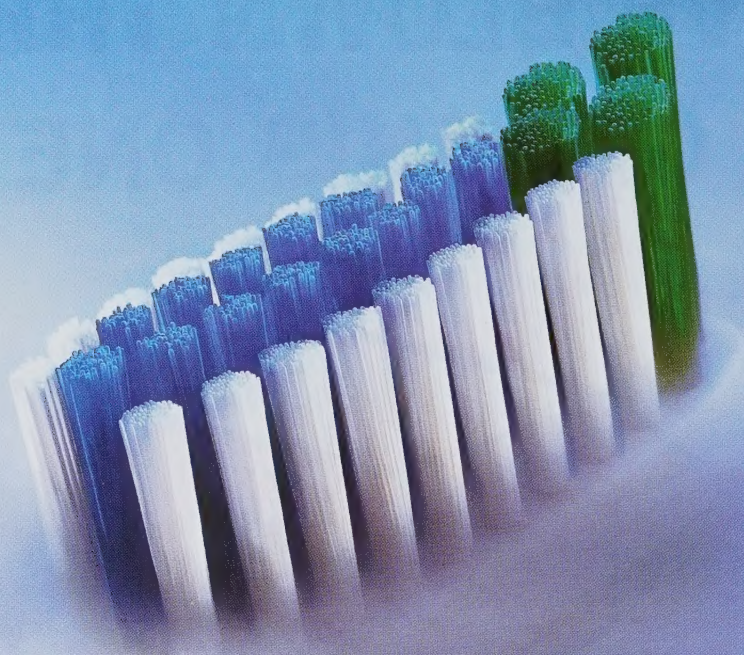
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Being the national voice for dental hygiene in Canada affords CDHA the opportunity to promote our profession to a variety of agencies beyond the realm of dentistry. We are able to approach large corporations and businesses to gain corporate sponsorship of grants and projects. We also work to establish important contacts within the federal government and other national associations, such as CDA. Collectively, the ultimate outcome of all our projects and initiatives is to strengthen our profession and position it well to take advantage of opportunities which will ensure a viable future for dental hygiene and enhanced security for our members.

As your national association, CDHA takes very seriously its mandate of providing for its members. Not only do we function in the here

and now to address your needs of today, but we also look ahead and plan for the initiatives necessary to create and shape the future for dental hygiene that we have envisioned. Membership in CDHA provides the support that we so critically require to continue the process and direct the changes we want to happen. Either we can direct that change or merely be a recipient. There are three kinds of people in the world—those who make things happen, those who watch things happen and those who wonder what happened—which one do you want to be? We all (CDHA, me and you) want dental hygiene to continue its maturation and remain an exciting and viable career and profession. So, when it comes to filling out your membership form and you ask yourself “Can I afford this?” also ask yourself “Can I afford not to?”

OUR BID FOR THE FUTURE... (continued from page 161)

Some of our pioneers are receiving rousing support for daring to take mobile clinics to the elderly or opening mall-based clinics to serve the economically-challenged. But where is our support for those who open clinics to serve cosmetic and/or elective needs? Some have stated openly that “those smile clinics don’t sit right with me”. If the service being offered is legally available to the public and within our scope of practice, then who better to offer it in the safest, most cost-effective and most informed manner than dental hygienists. If we don’t, someone else will.

Dental hygiene needs to be shrewd in planning its future. We need to not merely maintain the status quo of oral health care delivery, but to carve out a niche where the public and our profession can best be served. It need not be in opposition to any of our co-dental colleagues; our roles can complement both the delivery of care and the mode by which it is performed, be it in our own clinics or in a dentist employer’s clinic. This leaves room for the wants, needs and desires of all the stakeholders and any of their choices.

The most desirable future for health care is about choices and retaining the right to make them; choices about where and in what format we deliver our services and choices for the public on what services they consume, and in what settings they consume them.

Let’s not forget the depth of knowledge that is behind health care delivery—from the research science, through the education and training of clinicians, to the choices of the public and the means of access directed by the ministries and the regulatory bodies.

Our association is opting for the best choices for us and for the public; it seems to have the vision. Are we, the members, lagging behind? Our association deserves to have our support; it is in a prime position to view the complete scope of the issue. Inform yourselves and discuss some of these aspects for oral health care. They are at least as important as any of the new modes of therapy or trendy new technologies. Let’s not be our own worst enemies; let’s be smart and informed

and responsible to the needs of our public and our profession.



Marilyn Goulding graduated from the University of Alberta, Dental Hygiene program in 1977, obtained a Bachelor of Science in Clinical Research and Dental Hygiene Education from Empire State College in 1988, and is currently a candidate in the Masters of Oral Science Program at the University of Buffalo.

Marilyn served as *Probe's* Scientific Editor from 1989-1994 and is currently a member of the journal's Editorial Board.

SELF-ASSESSMENT TEST

*Prepared by Harriet McCabe, Dip.D.H., B.Sc.D.(D.H.) Candidate (Faculty Member,
Dental Hygiene Program, George Brown College of Applied Arts and Technology, Toronto, Ontario)*

Radiography/Radiology

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1. A large cone-shaped radiopacity is seen on a panoramic radiograph, obscuring the mandible. What is the cause of the radiopacity?
 - a. light exposure during processing
 - b. a lead apron artifact
 - c. insufficient intensifying screen
 - d. conical-shaped earrings
2. Why is it important to monitor the temperature of the developing solutions?
 - a. if the temperature is over 80°F (26.5°C), film fog results
 - b. if the temperature is 68°F (20.0°C), reticulation of emulsion results
 - c. if the temperature is 75°F (24.0°C), an under-developed film results
 - d. if the temperature is below 65°F (18.5°C), an overdeveloped film results
3. An oval radiolucency is seen near the apex of the second mandibular premolar on an periapical radiograph. What is the cause of this radiolucency?
 - a. condensing osteitis
 - b. mental foramen
 - c. periodontal abscess
 - d. mandibular canal
4. What is the cause of overlapped contact areas on an periapical radiograph?
 - a. incorrect film placement
 - b. incorrect vertical angulation
 - c. incorrect magnification
 - d. incorrect horizontal angulation
5. How can overlapped contact areas on periapical films be corrected?
 - a. replace the film perpendicular to the teeth
 - b. direct the central beam at a smaller angle to the film
 - c. place the position indication device (P.I.D.) at a 5° angle to the contact areas
 - d. direct the central beam through the interproximal spaces
6. At what angle should the dental radiographer stand in reference to the primary beam?
 - a. 135°–150°
 - b. 20°–55°
 - c. 55°–90°
 - d. 90°–135°
7. What would a radiograph look like if the kVp is increased?
 - a. look lighter than needed
 - b. exhibit a higher contrast
 - c. show less gray areas
 - d. display increased density
8. What is the significance of the inverse square law?
 - a. it changes the number of photons emitted
 - b. it impacts the intensity of the beam
 - c. it impacts the impulses generated
 - d. it affects the filtration
9. Which cells are most radiosensitive?
 - a. muscle
 - b. bone
 - c. nerve
 - d. blood
10. What unit of measurement does Health Canada (Dept. of Radiation Protection) use to monitor dosimeter readings?
 - a. mSv-millisieverts
 - b. J-joules
 - c. R-roentgen
 - d. Rems-roentgen equivalent in man
11. What is the function of the mA (milliampere) control on the control panel?
 - a. control the quantity of the rays emitted
 - b. provide the necessary power supply
 - c. generate a fluctuating current to avoid burnout of the cathode
 - d. emit electrons from the tungsten target

12. What is the function of the collimator in the x-ray tubehead?
- to restrict the size and shape of the x-ray beam
 - to stabilize the position indicating device (P.I.D.) to prevent film fog
 - to reduce the shorter, high energy x-ray beam
 - to filter out longer, low energy x-rays from the beam

13. Describe a radiolucent area on a radiograph.
- an area which has not received any radiation
 - an area of lighter deposits of black silver particles
 - an area where silver halide crystals have been energized
 - an area where a dense structure exists on the radiograph

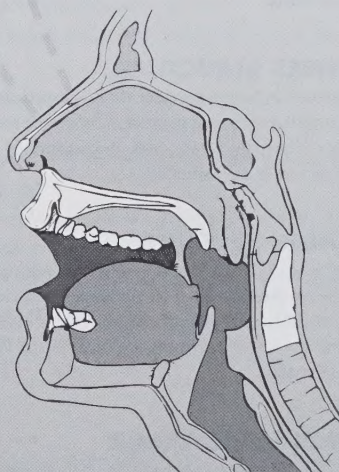
14. A periapical radiograph of the maxillary posterior sextant reveals teeth 1.6 and 1.5, and a clear unexposed area on the film where teeth 1.4 and 1.3 should be. How can this be corrected?
- retake the radiograph at a higher bisected angle
 - retake the radiograph placing the P.I.D. in a more anterior position
 - retake the radiograph in a more distal position
 - retake the radiograph in a superior position more parallel to the film

15. Classify the following radiation effects as either short-term effects [ST] (with large amounts of radiation) or long-term effects [LT] (with small amounts of radiation)
- _____ hemorrhage
 - _____ diarrhea
 - _____ nausea
 - _____ genetic defects
 - _____ birth anomalies
 - _____ vomiting
 - _____ cancer induction
 - _____ hair loss

- Haring and Lind *Dental Radiography*, W.B. Saunders, Co., 1996
- Goaz, *White Oral Radiology*, 3rd edition, Mosby, 1994
- Health Canada, *Recommended Safety procedures for the use of Dental Ray Equipment—Safety Code 30*, 1994

Biography

Harriet McCabe has been involved in many different capacities at the School of Dental Hygiene at the University of Manitoba. She has been the Radiology Coordinator, Second-Year Coordinator, ortho module administrator, clinical instructor and lecturer. She works part-time in the graduate periodontal department at the University of Manitoba. She is also employed in private practice in Winnipeg at the Garden City Dental Centre. Harriet has been involved in the item writing sessions for the N.D.H.C.B. She is a past president of M.D.H.A. and is the social chair for the up-coming 1999 C.D.H.A. Convention in Winnipeg.



Answer key: 1. b, 2. a, 3. b, 4. d, 5. c, 6. d, 7. d, 8. b, 9. d, 10. a, 11. a, 12. a, 13. c, 14. b, 15. a, ST, b, ST, c, LT, d, LT, e, ST, f, LT, g, ST, h, ST

Explorer

The Nurse Entrepreneur *Part III of a 3 Part Series*

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Business Considerations

An independent nursing practice is a business. You need to start with a business plan. Although planning and managing your business will likely present many challenges, several resources are available to assist you.

Familiarize yourself with the legislation pertinent to small business. Contact your provincial/territorial association for names of lawyers, accountants, consultants and insurance brokers who specialize in small business to help you. They can also review your business plan, and provide advice on matters such as the optimal structure for business, records and insurance. These business considerations are summarized briefly here.

BUSINESS PLAN

Outline your goals and objectives, and identify the market and marketing strategies. Include a financial forecast for your business and determine any financing requirements. Some municipalities require that you hold a business license.

BUSINESS STRUCTURE

Your practice can be structured in various ways including: sole proprietorship, partnership or group practice or, in some provinces, incorporation as a limited company. Obtain legal and accounting advice to determine which structure is most suitable.

BUSINESS RECORDS

In addition to client records, you must keep business records. Consult an accountant to establish good record keeping practices related to billing systems, client accounts and the filing of tax forms (e.g., income tax, goods and services tax). Consult regional district taxation offices of Revenue Canada.

BUSINESS INSURANCE

Business insurance needs vary greatly according to the type of services offered, location and number of employees. Consult an insurance broker and provincial/territorial worker's compensation boards.

Resources for nurses considering entrepreneurial practice

Before establishing yourself as a self-employed nurse, you will need to carefully research the professional and business issues identified above and elsewhere. While valuing the independence that comes with self-employment, you may at times feel isolated and lack opportunities for mutual support and relevant education. The resources listed below will help you with your research and lead you to sources of personal support and education.

Consult your provincial/territorial nursing association. Nursing practices and education consultants, and the registrar can provide you with practice standards, advice, position statements and guidelines.

Network with other nurse entrepreneurs. Sharing information and services will help you to identify community needs and a collaborative network for referrals.

The Canadian Association of Nurses in Independent Practice (CANIP) is an interest group of CNA. CANIP has prepared Guidelines for Independent Nursing Practice and maintains a national directory of nurses in independent practice. Membership provides you with a network and support group of self-employed nurses, information and educational opportunities and a forum for lobbying. CANIP's mailing is: 55 McCaul Street, Box 155, Toronto, ON M5T 2W7.

Educational courses and workshops that combine both the professional and business issues of practice are increasingly being offered. Contact nursing organizations and your local university or community college for information.

Midland Walwyn Capital Inc. provides CNA's Retirement & Savings Program and offers financial planning to CNA members.

Contact nursing libraries- such as CNA's Helen K. Mussallem Library

(E-mail: hkmlib@cna-nurses.ca) — for literature under headings such as entrepreneurship and private practice.

Business Consideration
Business Plan
Business Structure
Business Records
Business Insurance

Note to CDHA members:
The CDHA newsletter
Explorer will be revived
and revised during the
autumn of 1997. Watch for
its re-introduction in 1998

A CDHA Workshop

Motivation to Move: Tools for Professional Growth

SOON TO BE AVAILABLE ACROSS CANADA!

Since the summer of 1996, creative juices have been flowing in Winnipeg as a team of consultants worked on developing CDHA's new national workshop series, *Motivation to Move*. Initially, feedback was gathered during a focus group session to see how the national standards, *Dental Hygiene: Definition & Scope*, could be used in an effective and interesting (not boring!) way by dental hygienists practicing in a variety of settings. A workshop draft was developed, piloted, and revised and is now ready to be offered nationally, beginning in the fall of 1997. CDHA will be conducting a "train the trainer" session for facilitators from across Canada during the 1997 Professional Conference in Ottawa.

Motivation to Move offers you the opportunity to:

- think about where you are and where you're going, based on your personal principles and professional standards
- self-assess confidentially according to the newly revised practice standards
- identify the benefits of being proactive rather than reactive
- develop a personal, professional Mission Statement
- apply the practice standards to realistic scenarios
- network with other dental hygienists by sharing, supporting, changing and growing
- participate in four *Toolshops* which will introduce you to tools for your own personal and professional growth

Toolshop 1: helps you to set **goals** that are achievable

Toolshop 2: increases your awareness of how to manage your time more effectively

Toolshop 3: offers you the opportunity to be **creative**, generating and examining ideas using de Bono's "Six Hat Thinking"

Toolshop 4: increases your ability to use effective, win-win strategies for **negotiation**

MOTIVATION TO MOVE PARTICIPANTS HAVE SAID...

REGARDING THE STANDARDS:

- made the standards more "user-friendly"
- helped me to personalize the standards
- clearly pointed out the areas on which I can improve
- helped me to learn about my strengths as well as where I need some fine tuning

REGARDING THE FORMAT:

- small group discussion regarding the scenarios brought out ideas from different offices—good ideas to practice and areas that require changes

- the best part was the true-to-life scenarios and applying what we learned to them
- the activities helped me to absorb the information
- I think the activities were the best—you got to interact with the other members and see other points of view

REGARDING THE TOOLSHOPS:

- helped me to realize that I need to start setting goals (even small ones) and that now is a great time
- helped me to visualize my goals by writing them down
- helped me to realize that I can get more accomplished if I don't spread myself too thin
- can't wait to try this new method of idea-making (Six Hat Thinking)
- Six Hat Thinking was a fun way to use a very beneficial skill
- negotiation helped me to see what type of conflict management style I use

REGARDING OVERALL IMPACT:

- helped me to realize my priorities in my profession—what's important and how to go forward
- provided information that is worthwhile in life in general, as well as in dental hygiene practice
- fun to get out, laugh, and try to change your own perspective of your job
- helped me to realize that I am the only one who can change my life
- I hope to continue to form relationships with some members
- I felt very accepted
- the best part was being able to communicate with other dental hygienists away from the workplace
- realizing that others are in the same situation—sometimes you feel as if you're alone
- very informative!
- very motivating!
- it was great!

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CDHA hopes to see you at Motivation to Move!

Ask your local CDHA representative about bringing Motivation to Move to you!

Motivation to Move Developers:

Mickey Emmons Wener, Laura MacDonald, Sheryl Feller

Look for Motivation to Move and become part of group of dental hygienists who are ready to move back into the profession, move out of a rut, or continue to move forward!

TITLE:

Illustrated Dental Embryology, Histology and Anatomy

Authors: Mary Bath-Balogh and Margaret J. Febrenbach

Publisher: W.B Saunders Company, 1997

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I am always drawn to texts written exclusively by dental hygienists, so this text immediately caught my eye when I noted the authors were both hygienists. However, after reading through the book and examining the illustrations (between 10 and 30 in each chapter) and tables, I was sold on this text regardless of the authors' backgrounds. This 392-page textbook is very, let me correct that, extremely, well written. It combines the best of good research along with eye-catching presentation.

It is divided into four units: Introduction to Orofacial Region, Orofacial embryology, Oral Histology and Dental Anatomy. Each chapter begins with a set of objectives to be met by the content of the chapter. Areas of significance in any section are highlighted in blue allowing the reader to skim to areas of importance very quickly. Although the book is designed for use in a "building block" style, it is concisely written and arranged to allow quick and easy access to information in any chapter.

The first unit, "Introduction to Orofacial Region" gives a limited overview of head and neck anatomy. While there are numerous other texts on this topic, by including this within the framework of the book the authors provide a very nice cornerstone from which to launch their discussion of embryology and histology.

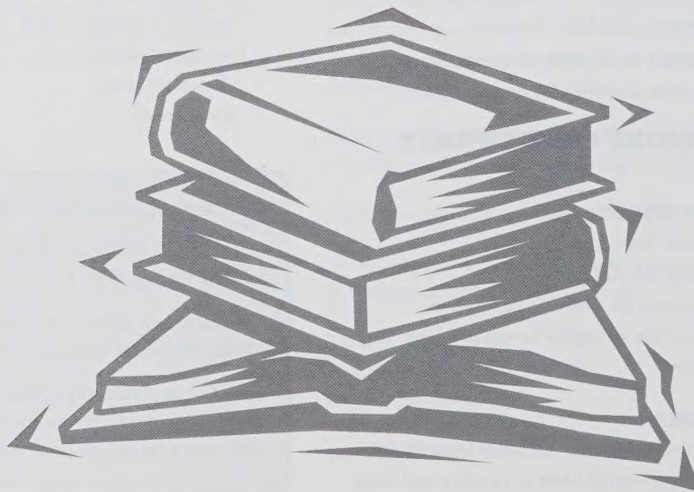
In "Orofacial Embryology", the overview of prenatal development begins with the origins of life, and follows the foetus through its nine-month gestation with a discussion of the development of the face and neck of the developing embryo. The integration of illustrations, tables and photographs complements the written script nicely, allowing a beginner to this topic to follow the scientific aspects of the subject easily.

The unit on "Oral Histology" begins with the simple life structure of the cell. It builds from this to basic tissue, outlining the various layers, epithelial, basement membrane, connective tissue, etc. There are eight chapters in this section with highly detailed information on gingival and dentogingival junction tissues, dentin and pulp, enamel, orofacial structures, and periodontium. These are all dealt with as separate entities, enhancing the understanding of individual structures. This can be a complex subject for newcomers to the field but the layout of the text prevents the reader feeling overwhelmed by the topic. The authors introduce tables to allow the reader to compare stages of development between tissues, which helps the reader to integrate information from other sections with the new material being presented.

The final section, "Dental Anatomy" is equally well done. Illustrations continue to be excellent, making it easy for the beginner to comprehend the three-dimensional anatomy of tooth structure as well as the chronology of tooth eruption and exfoliation. TMJ and occlusion are also dealt with in detail in this section.

As an educator, I feel this text would be invaluable to any first-year dental hygiene, dental assisting or dental student. It would certainly enrich the resource area of a dental facility. Practicing clinicians interested in a review of the basics would also find this publication a worthwhile investment. Any educator involved in histology, anatomy or embryology will find this text a very effective resource and teaching tool as can be purchased with accompanying overheads and/or workbook.

The authors have obviously taken pains to prepare a well-researched and well-written book. Their efforts have been well worth it!



By Mary Anne Burke,
Joan Lindsay, Ian McDowell
and Gerry Hill

Dementia Among Seniors

Reprinted from Canadian Social Trends, Summer 1997, with permission.

The aging of the Canadian population has focused a spotlight on people suffering from Alzheimer's disease and other forms of dementia. Dementia, a clinical syndrome characterized by severe losses of cognitive and emotional abilities, interferes with daily functioning and quality of life. According to the recent Canadian Study of Health and Aging, the number of Canadian seniors with dementia is likely to more than triple by the year 2031.

The public and private costs to society as the numbers of elderly Canadians with dementia increase will be high, given the nature of the care they will require.¹ Since dementia is a disease of aging, the impact will be disproportionately high for women, as there are more elderly women than men. Also, women shoulder a much larger load than men in caring for those suffering with dementia. Canadians will be increasingly challenged to find equitable, cost-effective and viable solutions for the care of those suffering from dementia.

Prevalence of Dementia

The prevalence of dementia increases sharply with age. According to the 1991 Canadian Study of Health and Aging (CSHA), 8% of Canadians over age 64 suffered from various forms of dementia—including 2.4% of seniors aged 65 to 74, 11% of those aged 75 to 84 and 35% of those over 84. There are more women than men with dementia: in 1991, 68% of those over age 64 with dementia were women. While women's greater longevity may explain some of this difference, it does not account for it all. Age-specific rates also indicated women are more likely than men to be diagnosed with dementia (Table 1).

Alzheimer's disease is the most prevalent form of dementia, accounting for 64% of all cases in 1991. Vascular dementia accounted for another 19% of cases, and other forms of dementia for the remaining 17%. While women were more likely than men to suffer from Alzheimer's, the opposite was true for vascular dementia. In 1991, among women over the age of 64 suffering from dementia, 69% were reported to be suffering from Alzheimer's disease and 14% from vascular dementia; among men the same age with dementia, 53% were reported to have Alzheimer's and 30% to have vascular dementia.

Current Care Practices

People suffering from dementia are fairly evenly divided between those in institutions and those living in the community under the care of informal, usually unpaid, caregivers. In 1991, 51% of the 252,600 Canadian seniors with dementia lived in institutions—

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TABLE 1

**DEMMENTIA INCREASES WITH AGE AND
IS MORE PREVALENT AMONG WOMEN**

Age group	(per 1,000)		
	Living in the community	Living in institutions	Total
65-74			
Male	10	437	19
Female	71	536	104
Both sexes	173	618	287
75-84			
Male	39	555	69
Female	20	406	28
Both sexes	68	532	116
85 and over			
Male	180	673	371
Female	45	572	86
Both sexes	16	419	24
All			
Male	69	533	111
Female	178	660	345
Both sexes	42	569	80

Source: "Canadian Study of Health and Aging: Study methods and prevalence of dementia"—Reprinted from, by permission of the publisher, *CMAJ*, 1994; 150(6), pp. 906.

Background on Data Sources and Definitions

The Canadian Study of Health and Aging (CSHA) is a joint effort of the Department of Epidemiology and Community Medicine at the University of Ottawa and the federal government's Laboratory Centre for Disease Control. The CSHA working group conducted a study of the elderly in 18 centres across Canada, excluding the Yukon, Northwest Territories, Indian reserves and military bases. The first phase of the study was conducted from February 1991 to May 1992. A representative sample of people aged 65 and over was chosen randomly: 9,008 living in the community and 1,255 in institutions. Participation rates were 72% for residents of the community and 82% for those in institutions.

One of the initial objectives of the study was to determine the prevalence of dementia in these two populations. Respondents in the community were interviewed at home and screened for the likely presence of dementia using a simple psychometric test. Those who failed the test, and all the residents of the institutions, were offered a standardized examination which resulted in a clinical classification into one of four categories: cognitively normal, Alzheimer's disease, vascular dementia, or other types of dementia.

Dementia is a clinical syndrome characterized by progressive loss of cognitive function, in particular memory, leading to inability to function physically and socially. The syndrome is associated with many diseases of the brain. In late life the most common are Alzheimer's disease and vascular dementia. Other less common causes of dementia include genetic diseases (e.g. Huntington's disease), infectious (e.g. Creutzfeldt-Jacob disease) and degenerative diseases such as Parkinson's disease.

Alzheimer's disease

Alzheimer's disease (AD)—a primary degenerative disease of the brain—is characterized by progressive memory impairment, beginning with loss of short-term memory. The decline in cognitive functioning is progressive. In severe cases there is extreme disability, which frequently requires 24-hour care. Alzheimer's disease does occur before age 65 but the prevalence at younger ages is too low to measure. The prevalence of Alzheimer's disease increases exponentially with age.

Findings from the 1991 CSHA confirmed a number of previously reported risk factors for Alzheimer's: family history of dementia; a history of head injury; age; and low educational status—possibly as an indicator of other socio-economic factors affecting the risk of AD, such as poor diet. A weak link to aluminum exposure was also established, but evidence was not clear, underscoring the need for further research. The CSHA also identified, for the first time, a link between AD and occupational exposure to glues, pesticides and fertilizers. The relationship also requires further study. The use of non-steroidal anti-inflammatory drugs (NSAIDs) was identified as a preventive factor that should be explored in further research.¹

Vascular dementia

Vascular dementia is an irreversible, progressive disease usually caused by arteriosclerosis of the cerebral arteries. It progresses by steps, with sudden decrements as more brain tissue is damaged by the underlying diseases, followed by periods of stability.

1. The Canadian Study of Health and Aging (CSHA) Working Group, 1994. "The Canadian Study of Health and Aging: Risk Factors for Alzheimer's disease in Canada." *Neurology*, November 1994.

a relatively costly form of care. Community care is dependent on an informal caregiver. Although daughters and, to a lesser extent, sons may be available to care for parents with dementia, they tend to have conflicting roles in terms of caring for their own families. Typically, then, elderly women care for their ailing spouses either until their husband dies or until their own declining health makes it impossible. As wives tend to outlive their husbands, women, more often than men, do not have full-time community caregivers and thus require institutional care. In 1991, for example, 54% of women with dementia were living in institutions, compared with 44% of men. Once institutionalized, women with dementia are also there longer: in 1991, women with dementia could expect to live on average 1.4 years in an institution compared with just 0.6 for men.²

Women have shouldered a disproportionate share of the informal care burden, either caring for their husbands or their ailing parents. The economic and human costs to women as care providers have not been quantified but are potentially enormous.

Mounting Pressures for New Models of Care

There are three issues that will necessitate careful planning for new models of care. First, the increase in the number of seniors with dementia will add to the institutional care required—and to the attendant costs. In 1993–94, Canadian seniors accounted for 75% of beds and 64% of spending by residential care facilities in Canada. Costs have continued to increase in these facilities, reaching \$94 per resident day in 1993–94, with the cost of direct care (nursing services, therapeutic services and medications, but not meals and administrative expenses) rising to \$46 per resident day.³

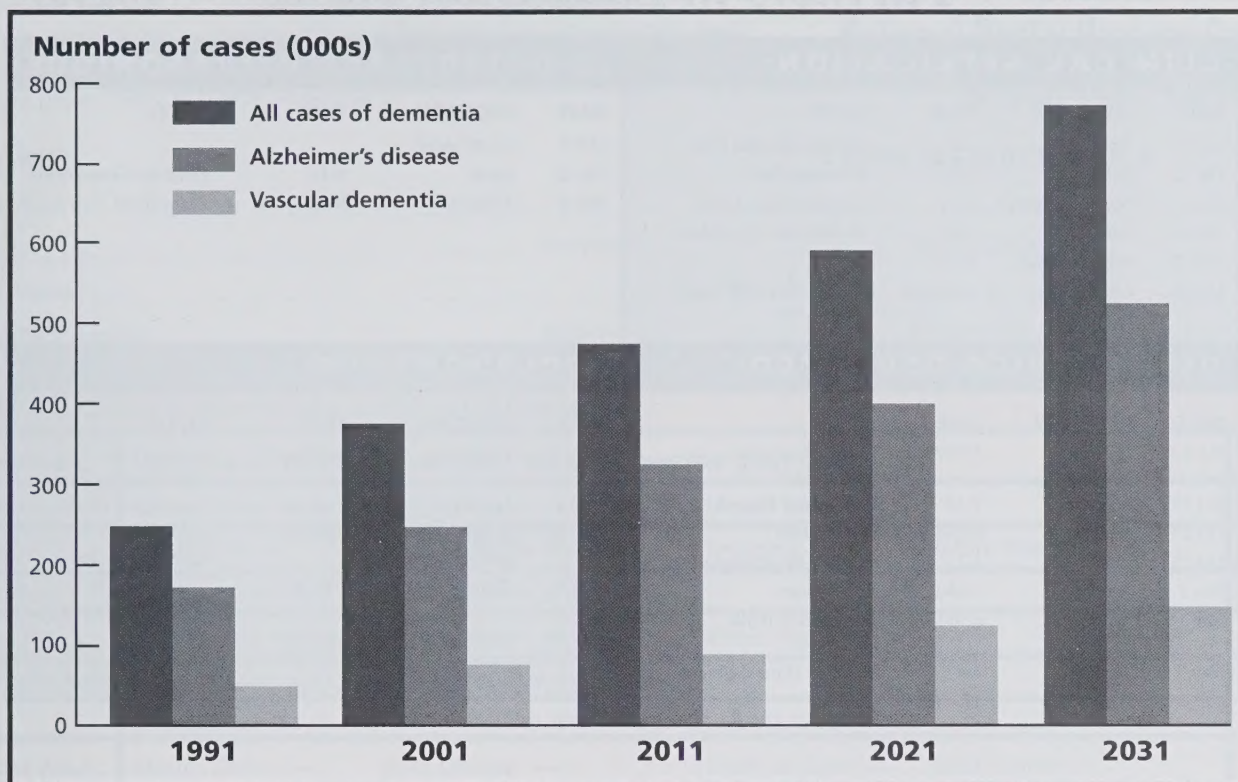
Second, the devolution of health care already necessitates new models of health care. For example, for the past decade, the workload of hospitals has continually shifted from inpatient to outpatient treatments, with outpatient visits increasing by 13% between 1986–87 and 1992–93, and the number of hospital beds dropping steadily by 14% over the same period.⁴ As such, ongoing care for all but the acutely ill has been increasingly shifted to informal caregivers. A similar move towards devolution of long-term institutional care may also be likely. The provincial government in Ontario, for example, already plans to shift responsibility for long-term health care from the provinces to municipalities.

Third, recent time-use surveys shows that women already face a considerable "time crunch" in coping with their current paid and unpaid responsibilities. A drop in the number of women able and willing to provide the intensive informal care required for a growing number of people suffering with dementia will add to the increased demand for high-cost institutional care; at the very same time, pressures to reduce institutionalization may grow.

No matter what scenario unfolds, communities will be challenged to find ways of sharing the heavy burden of caring for those suffering from dementia.

TABLE 1

IT IS PROJECTED THAT THE PREVALENCE OF DEMENTIA WILL TRIPLE OVER THE NEXT 35 YEARS



Source: "Canadian Study of Health and Aging: Study methods of prevalence of dementia"

— Reprinted from, by permission of the publisher, *CMAJ*, 1994; 150(6), pp. 906.

Conclusions

Current projections estimate that by 2031, the number of Canadian seniors with dementia—many of whom will be women—will triple (Table 2). The social and fiscal costs to society of having such a large group of ill people are not yet calculable. New studies suggesting that hormone replacement therapy can delay the onset of dementia and improve memory and concentration for those already affected offer some hope,⁵ as do other research efforts currently under way.⁶ Strategies that focus on a clear understanding of the risk factors and the development of preventative strategies may improve quality of life and reduce the number of Canadians with dementia. Both the challenge and the solution may lie in moving dementia from a private to a community health issue.

1. Ostbye, T., and E. Crosse. "Net economic costs of dementia in Canada," *Canadian Medical Association Journal*. 1994; 151:1457–1464.
2. Hill, G., W. Forbes, J-M Bethelot, J. Lindsay and I. McDowell. "Dementia among seniors," *Health Reports*, Catalogue no. 82-003-XPB, Autumn 1996.
3. Statistics Canada, 1996. *Residential Care Facilities, 1993–94*, Catalogue no. 83-237.
4. Statistics Canada, 1996. *Hospital Annual Statistics, 1992–93*, Catalogue no. 83-242, and *Hospital Indicators*, Catalogue no. 83-246.
5. Veterans Affairs Puget Sound Health Care System, Tacoma, Washington. Lead researcher, Dr. Sanjay Asthana.
6. Canadian Study on Health and Aging Working Group, 1994.

Mary Anne Burke was an analyst with Canadian Social Trends, Gerry Hill is an analyst with the Social and Economic Studies Division, Statistics Canada; Ian McDowell is an analyst with the Department of Epidemiology and Community Medicine, University of Ottawa; and Joan Lindsay is an analyst with the Cancer Bureau of the Laboratory Centre for Disease Control.

Canadian Social Trends is a publication of Statistics Canada.

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Statistics Canada, Canadian Social Trends, Catalogue No. 11-008, Summer 1997, pages 18-23 & 24-27.

CLINICAL APPLICATION:

DATE	LOCATION	TIME	HOTEL
Oct 3	Red Deer	1-4	Holiday Inn-Red Deer
Oct 22	Surrey	7-10	Ramadan Ltd.
Nov 1	North Vancouver	9-12	Lonsdale Quay Hotel
Nov 8	Edmonton	9-12	Holiday Inn-The Palace
Nov 22	Port Coquitlam	9-12	
Dec 4	Chilliwack	6:30-9:30	Holiday Inn Chilliwack Downtown

LE DETARTRAGE ULTRASONIQUE:

DATE	LOCATION	TIME	HOTEL
Oct 4	South Shore		
Oct 25	Laval	9-12	Hotel des Gouverneurs
Nov 8	Montreal	9-12	Delta Hotel

ULTRASONICS REVISITED:

DATE	LOCATION	TIME	HOTEL
Oct 14	Halifax	5:30-8:30	Holiday Inn Select Halifax Ctr.
Oct 18	Moncton	9-12	Holiday Inn Express
Oct 23	Windsor	6:30-9:30	Best Western
Oct 25	Cornwall	9-12	Ramada Inn-Cornwall
Nov 5	Pembroke	6:30-9:30	Best Western
Nov 6	Brockville	6:30-9:30	Best Western White House Mtl.
Nov 7	Toronto	1-4	Radisson Hotel-Eglington

PERIODONTIUM:

DATE	LOCATION	TIME	HOTEL
Oct 18	Vancouver	Full day	Holiday Inn-Vancouver Centre
Nov 8	Sudbury	Full day	Four Points Hotel
Nov 15	Regina (21 st century smile)	Full day	Regina Inn + Convention Centre
Nov 22	Toronto	Full day	Radisson Suite Hotel - TO Airport
Nov 29	Montreal	Full day	Delta Hotel

To register and for more information, call 1-800-263-1437

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CONTINUING EDUCATION CALENDAR

OCTOBER

Oct 18 **ORAL LESIONS**
Dr. Thomas Daley
On-site: Gisele Lee Todd, ODHA
Brantford, ON(905) 681-8883

18 **TOOTHACHES AND OROFACIAL PAIN: TYPICAL AND ATYPICAL TYPES**
Dr. Steven Ahing
Dalhousie University, Cont. Ed.
Halifax, NS(902) 494-1674

23 **ORTHODONTICS AND DENTAL HYGIENE**
Dr. Nancy Weaver,
Marg Wilson, RDH
University of Alberta
Edmonton, AB
Debbie(403) 492-5023

23 **ONTARIO DENTAL HYGIENE ORTHODONTIC STUDY CLUB AVOIDING BONDING FAILURES AND TREATMENT STRATEGIES**
Dr. Sperber
University of Toronto
Toronto, ON
Susan Debattista(416) 266-5711

OCTOBER

24, 25 **IMPLANT MANAGEMENT AND TREATMENT Certification Program**
Toronto, ON(416) 233-9454

25 **ORAL LESIONS**
Dr. Thomas Daley
On-site: Nancy Simpson-Smith, ODHA
Ottawa, ON(905) 681-8883

Nov 1 **IMPLEMENTING AND ORAL HEALTH PROGRAM IN LONG TERM CARE FACILITIES**
Ms. Jackie Smorang
Dalhousie University, Cont. Ed.
Halifax, NS(902) 494-1674

18 **OCCUPATIONAL HAZARDS RE: RADIATION, LATEX, MASKS**
Dr. E. Peters
Northern Alberta DH Society
Edmonton, AB
Glennis(403) 465-1756

15 **PHARMACOLOGY IN DENTISTRY**
Dr. Daniel Haas
Dalhousie University, Cont. Ed.
Halifax, NS(902) 494-1674

NOVEMBER

ORDER FORM

• FACTSHEETS • POSTERS • SWEATSHIRTS •

Complete and mail to Canadian Dental Hygienists Association,
96 Centrepoin Drive, Nepean, Ontario, K2G 6B1 or fax to (613) 224-7283.
Phone orders accepted for purchases payable by VISA/MASTERCARD—
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Order Your Materials Now
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October 19-25, 1997

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(H) Phone: _____ (W) Phone: _____

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FACT PADS (50 sheets per pad)—\$10.00 each

Theme	Item(s)—indicate quantity on line beside pad name	SUBTOTAL
NEW! Adults:	Gum Disease _____ Oral Cancer _____ Mouth Care _____	
Babies:	Fluorides _____ Nursing Bottle Decay _____ Teething _____ Infant Mouth Care _____	
Toddlers:	First Dental Visit _____ Preschool Mouth Care _____	
Teens:	Mouth Care _____ Gum Disease _____ Smokeless Tobacco _____	
School Child:	Mouth Care _____ Fissure Sealants _____ Small Poster (\$1.00 each) _____	
Older Adult:	Mouth Care _____ Gum Disease _____ Denture Care _____ Oral Cancer _____ Large Poster (\$1.00 each) _____	
General:	Oral Care _____ Gum Disease _____ About Dental Hygienists _____ Updated! Careers in Dental Hygiene _____ Updated! Portability, Practice and Licensure _____	

SWEATSHIRTS—\$25.00 each (See illustrations below)

Colour	Style	Quantity/Size		SUBTOTAL
		L	XL	
Navy Blue	Golf collar, with white CDHA logo printed on front			
Forest Green	"Astro" collar, with white NDHC slogan printed on front and back			
White	"Astro" collar, with purple NDHC slogan printed on front and back			

SHIPPING AND HANDLING

Prepaid shipping charges are as follows:

Under \$25.00	\$5.00
\$25.01-\$50.00	\$8.00
\$50.01-\$100.00	\$12.00
Over \$100.00	\$15.00

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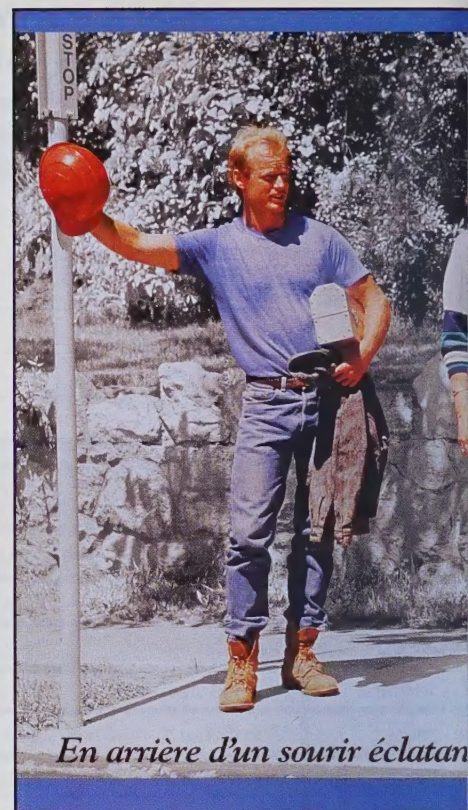
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NATIONAL DENTAL HYGIENE CAMPAIGN

October 19-25

1997



Behind Every Great Smile... A Dental Hygienist

1997 marks the last year that CDHA will be promoting this program for the NDHC. Members are encouraged to plan early and order materials now for the upcoming October campaign. An order form for the *Behind Every Great Smile...* poster series will be published in the next issue of *Probe*.

Over the next year, CDHA will be developing a new program to launch the *1998 National Dental Hygiene Campaign*.

1995—Toddlers

- First Dental Visit
- Mouth Care for Preschoolers

1995—Babies

- Fluorides
- Nursing Bottle Decay
- Teething
- Mouth Care for Infants

1994—School-Aged Children

- Mouth-Care for School-Aged Children
- Fissure Sealants

1993—Teens

- Mouth Care for Teens
- Gum Disease
- Smokeless Tobacco

1992—Seniors

- Mouth Care for Older Adults
- Gum Disease
- Denture Care
- Oral Cancer

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le soin dentaire personnel et professionnel

1996—Adults

- Gum Disease
- Mouth Care
- Oral Cancer

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Dollar Cost Averaging

A Disciplined Approach to Long-Term Investing

In today's unsettled market environment, many people are trying to formulate a sound investment strategy. The key rule of successful investing are to "pay yourself first" and to have a long-term perspective and investment objective. The secret to reserving money for your future is to view savings as an expense. This means that you must put aside a predetermined amount of money each month to pay yourself, just as you pay the expenses associated with running your hygiene practice.

A sensible approach, recommended by Financial Advisors for protecting investors from having to time the market, is to take advantage of dollar cost averaging. The expression "dollar cost averaging" may seem intimidating, but the concept is actually very simple. You must invest a fixed amount of money in an investment at regular intervals, preferably over a long period of time. By adhering to this strategy, your average cost will be lower than the average price over a given period, which could potentially translate into higher profits for you.



One key advantage to this strategy is that the investor does not have to invest a large amount of money at once. There is no need to follow trends in the market, or to subsequently attempt to time the market, because investors are buying units consistently, and fluctuations will balance themselves out over time. This eliminates the temptation to stop buying when the unit price goes down in value, or to wildly invest when the units rise in value.

Dollar cost averaging is perfect for mutual fund investing. It is also ideal as a sound RRSP savings strategy because it is becoming increasingly difficult for many individuals to come up with a lump sum payment at RRSP time. As it is important to make your maximum contribution every year, contributing on a regular basis is a sensible investment strategy.

For further information call your local Midland Walwyn Financial Advisor.

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PROBING THE NET

By Karen Wolfe, Dip.D.H.

There is a slight chill in the air, the days are shorter, and we are finally organized once again. All these must mean that September is here. Our vacations are over (hopefully you had a wonderful time) and our schedules are beginning to take shape with calendars and agendas filling up, perhaps sooner than we would like.

Here in the east coast our summer has been fantastic and I must confess, I did very little surfing on the WWW. I spent more time surfing the waves. But I'm back on track now with some new and exciting sites which will get your neurons fired up after a long and luxurious summer dozing in the sun. (Yeah, in my dreams!)

"...computers make it possible to access and retrieve information and knowledge in a convenient, manageable fashion.... [on] some topics about which the RDH must remain current." This is a quotation taken from a research article written by Kari L. Gould RDH and W. Paul Land, DDS on MEDLINE: *An Information Resource for Dental Hygienists*. This article and more can be seen at the University of Michigan based web site which also includes sites dealing with dental informatics, dental public health, dental hygiene, NLM project, MEDLINE Education, and more. For the article by Gould and Lang scroll down the left portion of the screen until you can click on the Dental Hygiene icon. Then click on Research. Then on MEDLINE: *An Information Resource for Dental Hygienists*. [note: Dear Readers, I am still trying to discover how to access MEDLINE. If anyone out there has had success feel free to contact me via my E-mail address, otherwise I hope to be able to update your next issue.] The address is: <http://informatics.dent.umich.edu/dentpuframe.html>

The next site is courtesy of the University of Padova and brings us *Dentistry Tomorrow* the International Dental Journal online. This site offers articles, archives, courses (under construction), dentsurfing, and information. The address is: <http://dentistry.mall.it> "Some studies on developing populations showed a caries increase when traditional diet is replaced with an alimentary regimen including refined sugar.... The medium index of caries DMFT is 2.9 in subjects who don't take snacks between meals. This value rises to 3.3 when fruit snacks are consumed... 3.7 in subjects who consume sweet packaged snacks." I discovered this quote in an article on prevention titled *Feeding, Dental Health and Caries* in the archives. Click on the Archives icon, then on Issue No.3 July 1996. Read and learn.

Now for all you Radical Hygienists while checking out the California DH Association homepage at <http://cdha.org/> I came across Bill #SB 1073 (amended version as of July 10, 1997) From this homepage you will need to click on the icon *Legislative Issues*, then click on *Legislative issues: wrap-up*. You will come up with a list of bill documents, just scroll down until you find the above number. What this bill is about is that Extended Care Health Facilities in California are trying to gain the authority to expand their spectrum of care through attracting doctors, dentists, etc to their clinics to deliver services to their clientele. At this site you will be able to inspect a transcript of the document mentioned to get an idea what is required from a political standpoint before changes can come in the area of Health Care Reform.

Well, until next time, keep on keeping on, friends.

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- Review the Board Book for the Annual Meeting and advise the Executive Council concerning areas which might have significant impact on the conduct of the scheduled business
- Act as a resource person on matters relating to parliamentary procedures and Association functioning as determined by the Constitution, Bylaws, Standing Rules and Association Manual
- Chair the annual meeting and other designated meetings to ensure that business is conducted in an efficient and orderly fashion
- Assist in the preparation of the Transactions following the Annual Meeting

Interested members are invited to submit their notice of interest and CV to CDHA Central Office by Jan 15th, 1998

At the Canadian Dental Hygienists Association we recognize that a majority of our membership pursues both personal and professional development education. We would like to tap into the areas of expertise that could benefit our association.

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Send your expertise information to CDHA and we will contact you when your talents are required. Our address is:

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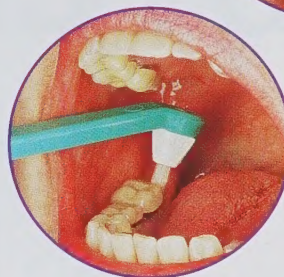
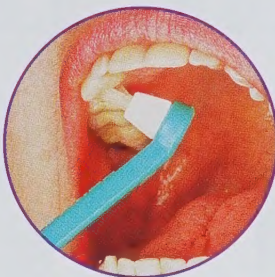


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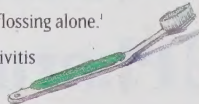
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* Gingivitis was evaluated using the Modified Gingival Index. † TM Warner-Lambert Company Warner Wellcome Inc. use Scarborough, Ontario M1L 2N3.

1. Overholser CD et al. Comparative effects of two chemotherapeutic mouthrinses on the development of supragingival dental plaque and gingivitis. *J Clin Periodontol* 1990;17:575-579.

2. Data on file, 1995.

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The Canadian Dental Hygienists Association

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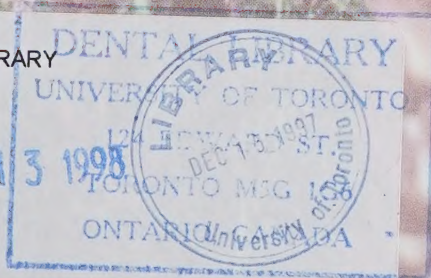


Highlights from Ottawa Conference

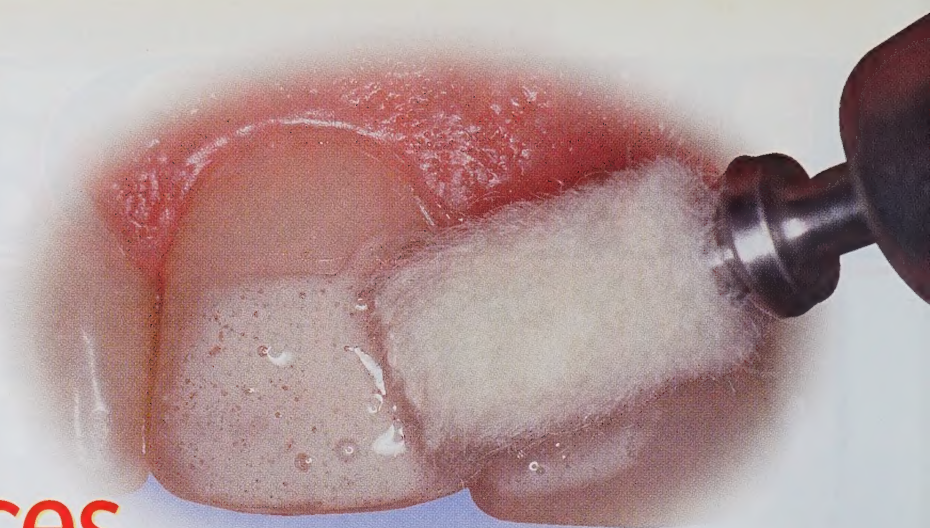
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I Love It When A Plan Comes Together

"To plan without carrying it out is futile — To carry it out without planning is FATAL"

(author unknown)

In order for any type of business or organization to achieve any measure of success in today's environment, it is essential that it utilize an effective planning strategy. Many buzz words are associated with planning including environmental scans, strategic planning, long and short range planning, corporate planning, assessment, evaluation and so on. When carried out in the proper sequence, these attributes combine to produce a plan of action which should ultimately determine the means by which desired end result(s) will be achieved.

Planning is a process that CDHA takes very seriously and as such, devotes a tremendous amount of time and energy. Just as dental hygienists plan their treatment by using the dental hygiene process of care, CDHA utilizes its own planning cycle and process. This process allows us to systematically plan appropriate activities designed to meet specific goals and objectives, which are, at all times, reflective of the CDHA Mission. Successful planning must be accountable, efficient and realistic as resource allocation (both people and financial) and budget forecasting are dependent on its accuracy.

In order to be effective, big picture planning needs the input of a number of individuals including those who think in the here and now, as well as visionaries with the foresight to envision the future of dental hygiene. Planning must be both short and long range because it is all too easy to get caught up in the demands of the present and fail to move beyond. In order to serve the profession well, CDHA must be ready with plans formulated to fulfill the future needs of our members. CDHA works very hard to address all these issues and more.

So, why so much emphasis on planning right now? Over the past few months, CDHA carried out 2 very important planning projects that will have an important impact on preparing and positioning CDHA (and our profession) for the future — these projects were a joint CDHA/Provincial Workshop and a Central Office operational review.

The CDHA Board is the sum total of its parts, and in this case, our parts consist of directors elected by the constituent associations of all the provinces (excluding Quebec). Prior to our Annual Meeting in Ottawa, CDHA conducted a one day workshop to discuss issues of common concern with dental hygiene representatives from all nine provinces. This meeting was unprecedented as it was the first time in CDHA's history that the Provincial Presidents, President-Elects and CEO's joined the CDHA Board and staff to address constituent ownership, direction and increased provincial requirements for national planning.

Over the course of the day, the 40+ participants openly discussed many topics and identified areas that require clarification. The feedback

from the workshop was very positive and it was encouraging to note that all provinces share the same collective vision for dental hygiene as CDHA, regardless of where each province is in its professional maturation. CDHA is committed to continuing on from the workshop and will, over the next year and in collaboration the provinces, be developing a strategic plan to clearly identify national/provincial responsibilities, representation and coordination of projects/ongoing processes. The outcome of this process will be a stronger, unified national Association.

The second project that CDHA carried out this year was an extensive operational review of our central office and our board/council operations. Executive Council identified that in order for CDHA to meet the ever expanding needs of the Board and the members, we require a central office that is structured to meet such diverse demands. The review process examined CDHA's strengths, limitations and opportunities and then generated recommendations regarding staffing requirements and operational changes. The Board reviewed the final report in June and agreed upon a new staffing/operational structure.

At present, and until Spring 98, the office is in its transition phase as we begin to hire new, additional personnel in the areas of administrative support, Communication Services and Professional Development Services. The end result of this restructuring and planning will be a central office prepared to provide the critical support systems and processes necessary to enable CDHA to meet its future challenges and goals.

Planning is a mechanism which is vital to the running of any organization. During the Workshop it was mentioned that it is imperative that we ensure a constant focus on the future while maintaining the present and respecting the past. As dental hygienists, we know who we are and where we want our profession to be; successful, effective planning helps us determine how we are going to get there. To operate without having an established plan would not only be foolish and irresponsible, but also FATAL!



Judy Clarke is a 1987 graduate of the University of Alberta Dental Hygiene Program. She has worked full-time in private practice over the past ten years and continues to do so in Edmonton Alberta.



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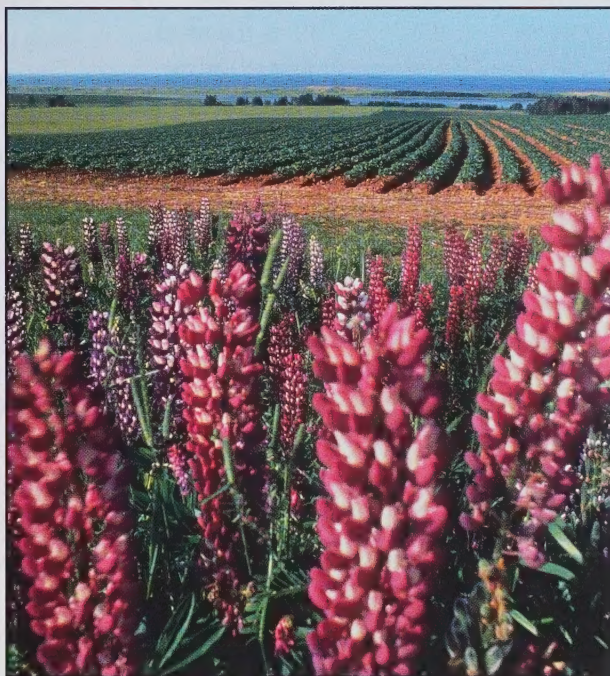
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Photograph by John Sylvester



COVER:

Blushing lupins bow in the breeze on a P.E.I. summer landscape. See preliminary conference program on page 226.

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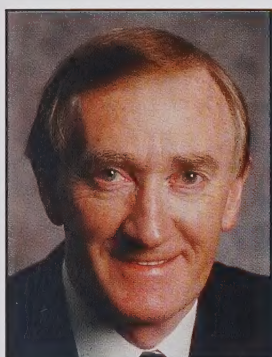
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Dr. Toby Gushue

Newfoundland Dentist, Dr. Toby Gushue, President of the Canadian Dental Association

St. John's dentist, Dr. Toby Gushue, has assumed the office of president of the Canadian Dental Association following the Association's annual Board of Governors meeting in Ottawa, September 19th and 20th.

Dr. Gushue began his dental career in Grand Falls, NF after receiving his dental degree from Dalhousie University in 1973. He has maintained a general practice in St. John's since 1977.

Dr. Gushue has been active in organized dentistry throughout his career. He has served on numerous committees of the Canadian and Newfoundland Dental Associations. He was a member of the executive committee of the NDA and served as its executive director from 1980 to 1987. He was elected to the CDA's Board of Governors in 1987, and joined its executive council in 1991.

Dr. Gushue is a member of the International Dental Federation, and is a fellow of both the Pierre Fauchard Academy and the International College of Dentists.

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Distinguished Service Award

Ms. Signe Jewett R.D.H.

Ms. Signe Jewett has been a dental hygienist for over ten years in private practice, as an instructor of dental hygiene, and a tireless volunteer on various committees on behalf of dental hygiene.

At the MDHA level she has held many positions, including: fundraising, secretary, Vice-President, President, DAAM (Dental Auxiliaries Association Of Manitoba) representative, and is currently archivist. She is also the chair for the annual CDHA conference to be held in Winnipeg in 1999. (Her work has just begun). She has worked to recruit new members and also to reactivate past members to work on the executive. To all these efforts Signe has given 200%. Her primary focus over the past three years has been towards self-regulation for Manitoba through DAAM.

Ms. Jewett has also been asked to sit on the Manitoba Provincial Oral Health Action Committee, which has been mandated to investigate how to better provide oral health care to all Manitobans.

Graduate Student Research Award 1997

Mr. Shafik Dharamsi was awarded the CDHA Graduate Student Research Award in Ottawa at the June 1997 CDHA Awards Luncheon. Mr. Dharamsi received his Bachelor of Science in Dental Hygiene from the Medical College, Georgia in 1993 and his Masters of Dental Science in 1996 from UBC.

Mr. Dharamsi is enrolled at the Institute of Health Promotion Research and the Individual Interdisciplinary Studies Graduate Program, UBC, in an interdisciplinary doctoral program of study which will prepare him for an academic and research career in the areas of oral health promotion, curricular development, health and social policy and service delivery, with a specific emphasis on underserved and special needs populations. His study is designed to explore the ethic of social responsibility to effect change in dental education and in the existing philosophy of dental practice in addressing the unmet needs of underserved populations. "My research questions are: 1) What does social responsibility mean to dental and dental hygiene educators, practitioners, and policy makers within the context of their work? 2) How do these stakeholders interpret and act on the concept of social responsibility and how do their interpretations influence dental education, practice, and policy formation? and 3) How are conceptions of social responsibility related to issues of power, gender, class or race, and professional and historical privilege?"



Shafik Dharamsi

Call for Abstracts

The 14th International Symposium on Dental Hygiene to be held in Florence, Italy on July 2-4, 1998 is inviting abstract submissions by December 1997 to

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Listerine and CDHA Lead a New Partnership Initiative

Representatives from Warner-Lambert Consumer Healthcare, manufacturers of Listerine Oral Antiseptic, and the CDHA held a fact finding meeting to discuss the possibility of future collaborative projects. Taking part in this initiative on behalf of the industry were Wes Pringle, Category Associate with Warner-Lambert and Chris Sherwood of Catalyst North Inc., a dental/medical communications agency. Representing the CDHA were Ellen Brownstone, Donna Bowes, Leanne Carlson-Mann, Patricia Noble and Wanda Staples.

The meeting commenced with personal reflections and ideas regarding the future of dental hygiene in Canada. Wes Pringle then gave a brief synopsis of the Listerine business and how it can provide leadership in the dental hygiene community. Participants identified areas of potential future collaboration in the fields of research, product development and continuing hygiene education.

The meeting adjourned with agreement from all participants that the Warner-Lambert/Canadian Dental Hygiene Advisory Board be officially formed and meet on a regular basis to explore innovative future programs that will benefit the hygiene community at large.

Funding For Family Violence Seminar

CDHA member groups who are interested in hosting a seminar on "Ending Family Violence: Role of the Dental Community" are invited to submit proposals for speaker funding through the CDHA Health Policy and Promotion Council.

Applications must be directed towards an upcoming project and include a detailed summary of the proposed seminar. Proposals should contain information on audience profile, numbers expected, promotion methods and evaluation and follow-up.

The grant consists of \$1,000 to be used to cover the cost of the Denim/Gillespie Associates presentation. The speakers travel (from Ottawa), hotel, and meal expenses as well as other meeting costs would be the responsibility of the organization applying for the funds.

Deadline for Application is January 15, 1998.

For further information contact:

Heather McElroy
Health Policy and Promotion Council
3807 64A St. Close
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New Treatment Offers Hope to Sufferers of Little Known Autoimmune Disease

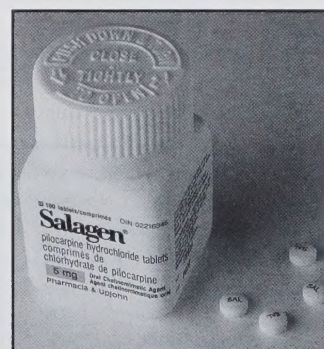
(August 18, 1997) — Today, Canada became the second country in the world to approve a new treatment, SALAGEN(Reg) (pilocarpine hydrochloride) tablets, for the symptoms of xerostomia (dry mouth) and xerophthalmia (dry eyes) due to Sjogren's syndrome (pronounced SHOWGREN'S). Sjogren's syndrome is a chronic autoimmune disease that causes severe dry mouth and eyes, often completely disrupting the lives of those who suffer from it. SALAGEN R tablets, made from the naturally-occurring alkaloid pilocarpine obtained from the leaflets of a South American shrub (*Pilocarpus jaborandi*), is marketed in Canada by Pharmacia & Upjohn.

People affected with Sjogren's syndrome often have difficulty chewing properly, swallowing or even trying to speak without taking sips of water. In some cases, a person's mouth may contain so little saliva that tooth decay becomes rampant. Extremely dry eyes often lead to difficulty in reading, watching television and constant irritation. The majority of patients with Sjogren's syndrome are female, mostly middle-aged and often post-menopausal. The condition touches people of all races and all socioeconomic segments of the population. More

than 300,000 Canadians may be affected. There is no cure although SALAGEN R can significantly improve the symptoms of dry mouth and dry eyes associated with Sjogren's syndrome, resulting in improved comfort and quality of life of those who suffer from the condition. The product was also approved earlier this year for symptoms of dry mouth caused by radiation therapy for cancer of the head and neck.

*For more information,
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Canada M3B 1Y6



CDHA Student Hygienist Scholarship Program

What is the Student Scholarship Program?

The Student Scholarship is awarded to undergraduate dental hygiene students for their contributions to the advancement of dental hygiene.

The program consists of:

- One \$1,000.00 scholarship to be used toward dental hygiene education expenses.
- Air travel expenses to and from the CDHA Annual Professional Conference and three nights accommodation at the conference hotel. (Conference registration will be paid by the CDHA).

Who is Eligible?

- Undergraduate dental hygiene students.
- Applicants must be CDHA student members.

How to Apply

- Applicants must submit, in writing, a description of their involvement with the Canadian Dental Hygienists Association.
- Applications must be accompanied by the endorsement of two CDHA members.

Criteria for Judging

- Demonstrated involvement in the Canadian Dental Hygienists Association, e.g.
 - Submitted material for publication in the CDHA *Journal* and/or *Explorer*.
- Demonstrated keen interest in national dental hygiene issues.
- Demonstrated qualities of leadership.
- Participation in National Dental Hygiene Campaign.
- Participation in national/international conferences such as table clinic presentations, poster sessions, presentations, etc.
- Applicants must describe how they have promoted oral health and the profession of dental hygiene in the community.

Note: The successful candidate must agree to submit for publication an article outlining his/her accomplishments/involvement.

Application Deadline

Applications are to be submitted to CDHA's Central Office by April 1, 1998.

For further information and/or an application form for the Student Hygienist Scholarship Program, the CDHA Dental Hygiene Research Grant, or the CDHA Graduate Student Research Award, contact:

Canadian Dental Hygienists Association
Centrepointhe Chambers, 96 Centrepointhe Dr.
Nepean (Ottawa), ON K2G 6B1
Telephone: (613) 224-5515 Facsimile: (613) 224-7283

CALL FOR APPLICANTS

CDHA Dental Hygiene Research Grant

OBJECTIVE: To support Canadian Dental Hygienists engaged in research that enhances the dental hygiene profession's ability to promote health and well-being.

GENERAL DESCRIPTION: A grant of \$5,000 will be awarded annually to a Canadian Dental Hygienist involved in qualitative or quantitative research as a principal investigator or co-investigator. Preference will be given to research projects relevant to the discipline of dental hygiene and the goals of the CDHA.

ELIGIBILITY: Applicants for this grant must be academically qualified Canadian Dental Hygienists who are active or life CDHA members in good standing. Evidence of academic credentials at the Masters and/or PhD level is required.

APPLICATIONS: The deadline is **March 31, 1998**. Applications must be submitted on forms available from CDHA's Central Office.

CONDITION OF AWARD: On completion of the research project, recipients of this grant agree to provide a written report for the *Probe* or reprints of journal articles to CDHA's Central Office.

CALL FOR APPLICANTS

CDHA Graduate Student Research Award

OBJECTIVE: To promote the research training of Canadian dental hygienists in research oriented Masters or Doctoral programs

GENERAL DESCRIPTION: An award of \$5,000 will be given annually to a highly qualified candidate enrolled as a graduate student in a Masters or Doctoral program.

ELIGIBILITY: Applicants for this award must be Canadian Dental Hygienists who are active, associate, student or life CDHA members, in good standing, who may be studying full or part time. Applicants must present evidence of having been accepted by a recognized academic institution.

APPLICATIONS: The deadline is **April 1, 1998**. Applications must be submitted on forms available from CDHA's Central Office.

DURATION: This award is made for one academic year for full-time students or the equivalent for part-time students. The award may be renewable for one additional academic year or its equivalent on receipt of a satisfactory progress report. The progress report must detail work to date and include any pre-prints or reprints arising from the work. Any request for renewal of this award should be accompanied by a letter from the research supervisor and one other referee.

CONDITION OF SUPPORT: On completion of studies, recipients of this award agree to provide a bound copy of the thesis or project to CDHA's Central Office.

Investing in Health: The Shaping of Public Health Policy

The Canadian Public Health Association Conference *Investing in Health: The Shaping of Public Health Policy* was held in Halifax from July 6-9. Heather McElroy, Health Policy and Promotion Council and Sue MacIntosh attended for CDHA. The focus of the meetings was to address the increasing concern about the impact of current public policies on the health and well being of Canadians. In particular, the public health advocates are alarmed by the number of children living in poverty in this country. The goal of the conference was to broaden our understanding of public participation in policy development and increase our knowledge of the links between poverty, public policy and health.

The sub-plenary sessions delved into these issues in great detail and offered different perspectives on influencing health policy, the impact of health policy and critiquing health policy.

While policy certainly dominated the proceedings, the concurrent sessions provided information on topics such as unemployment and health, access to services, intervention, prevention, and a wake-up call in the presentation *Beware the New Zealand Experience*.

During a luncheon address to all delegates, Dr. Jim Smith, Minister of Health for the Province of Nova Scotia, made particular mention of the important role of the public health dental hygienists in Nova Scotia within the children's oral care program.

The conference was an excellent opportunity for us to appreciate that the issues we are dealing with at CDHA are inherent throughout the health system and we need to continue to work with organizations such as the Canadian Public Health Association and the Literacy and Health project.



Left to Right: Sue MacIntosh, Past President, CDHA; Deborah Gordon, Program Co-ordinator, National Literacy and Health Program; Nancy Foreman, National Literacy and Health Program; and Heather McElroy, Health Policy and Promotion Council Member, and Director CDHA, in attendance at the CDHA Conference.

A New Forum for Dental Hygiene Educators

Welcome to Dental Hygiene Educators Canada

In conjunction with the CDHA Professional Conference in June, 1997, representatives from a majority of Canadian dental hygiene faculties met to discuss the inception of an organization for dental hygiene educators. During the session a resolution to establish such an organization received unanimous approval by the participants.

This is an invitation for Canadian dental hygiene educators and those interested in dental hygiene education, to participate in the development and ongoing work of this new organization which has been named Dental Hygiene Educators Canada (DHEC).

What is this organization all about? During the June meeting participants generated a vision for the new organization which will be reviewed and validated over the coming year. The following points summarize the vision which was created:

Vision for Dental Hygiene Educators Canada

Dental Hygiene Educators Canada is an organization committed to a collaborative, national, proactive, visionary approach to the advancement of articulated, research-based dental hygiene education. It:

- promotes research-based dental hygiene education
- supports and shapes the growth of the dental hygiene profession through education
- fosters professional growth in dental hygiene students, and
- stimulates pride in the profession through education.

DHEC advances, advocates and promotes teaching and learning excellence in dental hygiene education through research, professional and policy development, and continuous quality assurance mechanisms. Its core values include adaptability, perseverance, flexibility, leadership, diversity, a future-focus, optimism, independence and caring ethic.

The founding members of DHEC have made a commitment to the development of an inclusive association with both institutional and individual membership options. Membership categories will provide opportunities for individuals with an interest in dental hygiene education to actively participate in the organization. These categories are expected to attract membership from other health professions, educational consultants and personnel from organizations who have an interest in education. The work of the association will be supported by individual and institutional membership fees.

A New Forum... (continued on page 221)

The Effects of Cigarette Smoking on Periodontal Disease

Introduction

It is well documented and accepted that the primary cause of periodontal disease is bacterial infection of long standing.¹ In addition, there are many other risk factors that increase the likelihood of the occurrence of periodontal disease and among these is smoking. Among those people affected by chronic periodontal disease, a high proportion are smokers. The estimated risk for smokers developing periodontal disease is more than twice that of nonsmokers.²

Tobacco use, especially cigarette smoking, is widely recognized by the medical community and general public as a major public health problem. It is the single most preventable risk to human health in developed countries and a major cause of premature death worldwide. In this decade, tobacco will cause about 30% of all deaths in developed countries for people aged 35 to 69 years, making it the largest single cause of premature death.³ In the United States smoking is the leading cause of preventable death. According to the Centers for Disease Control, the health care costs associated with smoking have soared to more than 50 billion dollars per year.⁴

Clinical findings related to smoking and periodontal disease have been well-documented. Increased probing depths, alveolar bone loss, and tooth loss have all been reported to be more severe in smokers.¹ In addition, smokers respond less favorably than nonsmokers to nonsurgical and surgical periodontal therapy and guided tissue regeneration.⁵

Mechanisms of Action

In order for a host to cope with bacterial infection, fully functioning neutrophils are required. Tobacco use is linked with the impairment of neutrophils and macrophages. On average, one million neutrophils per minute enter the oral cavity via the gingival crevicular fluid. These cells function to protect the gingiva against microbial invasion by secreting hydrolytic enzymes and producing oxygen radicals which assist in microbial killing.⁶ Tobacco smoke has been shown to depress the number of normal polymorphonuclear locusts (PMN) and thus adversely affect their chemotactic and phagocytic ability. This suggests that tobacco smoke mutabilities could contribute to a compromise of PMN phagocytic function.⁹

One in vitro study demonstrated that nicotine significantly impaired the ability of neutrophils to kill three pathogens commonly associated with periodontal disease (*a. naeslundii*, *a. actinomycetancomitans* and *f. nucleatum*).⁶ MacFarlane et al studied 31 healthy subjects with refractory periodontitis and found that 90% of them smoked tobacco and showed a high concordance with peripheral PMN defect in phagocytosis.⁷

In addition to impairing PMN function, nicotine will also alter the nature of fibroblast attachment to root surfaces. Substances in tobacco smoke may affect the periodontium immediately after periodontal therapy by inhibiting fibroblast attachment to root surfaces, thus preventing new attachment of periodontal tissues to the teeth.⁸

Incidence of Periodontal Disease

Observations indicate that smokers are over represented among clients affected by chronic periodontal disease. Significantly greater frequencies of periodontally involved teeth and diseased sites are found in smokers than nonsmokers. Studies suggest that there is an increased prevalence of pocket depth, alveolar bone loss and tooth loss in smokers.⁹⁻¹¹

POCKET DEPTH

The use of tobacco increases the severity of periodontal attachment loss.¹² Periodontal breakdown and pocket formation is more severe in smokers even when the influence of oral hygiene is accounted for.¹³ In Linden and Mullally's study of 82 subjects the mean probing depth was greater for smokers than for nonsmokers.⁹ The prevalence and number of sites affected by different levels of attachment loss were higher at every threshold for the smokers than the nonsmokers. In total, 24% of smokers had probing depths over 6 mm compared to 5% of nonsmokers. A study by Stoltenberg et al found similar results. Of 615 subjects studied, 25% of the smokers had probing depths of 6 mm or greater compared to 10% of the nonsmokers.¹ After matching the samples for age, sex, plaque and calculus, the odds of having a posterior proximal probing depth greater than 3.5 mm was 5.2 times greater for smokers than nonsmokers.¹ The relationship between cigarette smoking and severity of periodontal disease in this study was significant because the subjects were medically healthy, had access to care and had received recent medical and dental examinations.¹

Goultschin et al also found that periodontal pocketing was more frequent in smokers irrespective of the amount of plaque present.¹⁴

BONE LOSS

Several investigators indicated a relationship exists between smoking and loss of alveolar bone. The progressive loss of bone mineral with advancing age was more prominent in smokers, with current smokers under age 55 showing greater bone loss than nonsmokers.¹⁰ A study of 210 subjects with good oral hygiene suggested that the loss of periodontal bone was related to smoking. The smoking-related bone loss did not correlate with plaque infection and the pattern of bone loss ended when smoking was terminated.¹⁵ This finding suggests that smoking primarily exerts a systemic influence, not a local one. Bergstrom's study of 164 twin subjects also found that those people with a high lifetime smoke exposure had more bone loss and a greater number of teeth lost than those with a low lifetime smoke exposure.¹¹ Smoking status should be considered important when assessing the risk for alveolar bone loss.

TOOTH LOSS

People with a high lifetime smoke exposure have a greater number of lost teeth compared to people with a low lifetime smoke exposure.¹¹ A study by Osterberg et al of 1377 subjects found tobacco smoking to be a major risk factor for tooth loss in elderly men.¹⁶ This finding is supported by a study of 273 people over a ten year period, indicating that smokers lost more teeth than nonsmokers. In the group born before 1939, 35% of smokers lost teeth compared to 3% of nonsmokers. Smoking accounted for up to 80% of all tooth loss among the smoking group.¹⁷ The amount of plaque and smoking habits correlated to tooth loss. People with poor oral hygiene that smoke are at much higher risk of losing teeth than people with poor oral hygiene that do not smoke.¹⁷

Differences in Tobacco Consumption

There is a significant link between the number of years of exposure to smoke and dental states.¹⁶ Data on current smokers shows that a dose response relationship exists between both the number of cigarettes smoked and the duration. People smoking more than ten cigarettes a day for more than 10 years are more frequently affected with moderate to advanced periodontal disease than those who smoke less for a shorter duration.¹⁵ Goultschin et al found a significant decrease in healthy periodontal tissues is revealed with an increased number of cigarettes smoked. The largest difference exists between those who do not smoke at all and those who smoke more than ten cigarettes a day.¹⁴

A study by Martinez-Canut et al¹² of 889 periodontal clients showed that statistically significant differences were observed between smokers of 11 to 20 cigarettes per day and smokers of over 20 cigarettes a day. No statistically significant differences were found between smokers of ten cigarettes a day and nonsmokers. For each extra cigarette smoked per day, there was an increase of 0.5% periodontal attachment loss. Holm¹⁷ found similar results when studying 273 subjects over a ten year period. The younger people were that smoked more than 15 cigarettes a day, were at 78% higher risk of losing teeth than nonsmokers.

Smoking and Response to Periodontal Therapy

It is generally accepted that smoking impairs wound healing. Smoking is associated with impaired healing following dental treatment, including both surgical and nonsurgical treatment.¹⁹ Cigarette smoking is

associated with a reduced healing response following nonsurgical periodontal therapy, surgical therapy and guided tissue regeneration of infrabone defects.¹⁹⁻²¹

NONSURGICAL THERAPY

Effective removal of dental deposits combined with good oral hygiene practices was found to be essential in treating clients with chronic periodontal disease.²² Nonsurgical treatment resulted in a reduction of gingival inflammation and pocket depth which in turn facilitated the client's own ability to effectively control plaque.

In Preber and Bergstrom's assessment of 75 subjects receiving nonsurgical therapy, they found the reduction of pocket depths to be less in smokers than in nonsmokers in all regions of the dentition. The greatest difference between groups was observed in the maxillary anterior region.²² A study by An et al reported similar results. Smokers responded less favorably than nonsmokers to nonsurgical periodontal therapy which included three month maintenance follow up.⁵

SURGICAL THERAPY

Chronic smoking may also adversely affect the outcome of surgical flap debridement therapy. Preber and Bergstrom's study of 54 subjects undergoing Modified Widman surgical therapy found that pocket depth reductions or improvements were more frequent in nonsmokers whereas impairments were more frequent in smokers.¹⁹ In total, 71% of smokers exhibited one or more pockets with an increased probing depth at 12 month follow-up compared to 32% of nonsmokers.¹⁹ These results are supported by the findings of Johnson et al where smokers also demonstrated less improvement in probing depths and attachment levels following surgical flap debridement therapy.⁵

GUIDED TISSUE REGENERATION

The treatment of deep infrabony pockets using the principles of guided tissue regeneration resulted in a clinically significant and reproducible gain in clinical periodontal support.²¹ Cigarette smoking was associated with reduced healing response after guided tissue regeneration of deep infrabony pockets treated with teflon membranes. It was reported that during the formation phase of healing, the newly formed tissue filled the infrabony component to the same extent in smokers and nonsmokers but one year follow-up showed that smokers gained significantly less attachment level than nonsmokers.²¹

Effects of Smoking on Gingival Blood Flow

An increase in amount of plaque leads to an increased likelihood of gingival bleeding does not necessarily hold true for smokers. Lack of inflammatory response may occur due to a vasoconstrictive action of smoke upon gingival blood vessels.¹¹

Nicotine has pronounced effects on the cardiovascular system causing initial peripheral vasodilation followed by vasoconstriction which in turn reduces gingival blood flow.²³ A study of 17 healthy adults showed that smoking produced a marked transient increase in gingival crevicular fluid flow rate which may reflect changes in blood flow.²³ A study by Baab and Oberg²⁴ failed to demonstrate a link between smoking and gingival blood flow.

Since gingival bleeding can be an early symptom of gingival inflammation the possible effect of smoking on reduced gingival blood flow in clients with periodontal disease is a concern because it may result in a missed clinical sign. Such an effect could jeopardize an

accurate clinical assessment and also reduce the client's and dental professional's chance of recognizing signs of disease.¹¹

Conclusions

Based on research, current knowledge about tobacco and periodontal disease strongly suggests that tobacco is associated with an increased risk for destructive periodontal disease.²⁵ It has been clinically demonstrated that smoking will influence the severity of pocket depth, bone loss and tooth loss and will also increase the risk of not responding favorably to therapeutic intervention. These effects become more evident with increased tobacco consumption. Current smoking habits of the population, particularly the increasing prevalence of smoking among youth, suggest the proportion of clients presenting with periodontal disease complicated by smoking will continue to be of major concern. The influence of smoking on periodontal disease should be considered when evaluating the efficacy and prognosis of periodontal therapeutic procedures.

References

1. Stoltenberg J., Osborn J., Pihlstrom B., Herzberg M., Aeppli D., Wolff L., Fischer G.: "Association between cigarette smoking, bacterial pathogens, and periodontal status." *J. Periodontol* 1993, 64(12): 1225-1230.
2. Bergstrom J.: "Cigarette smoking as risk factor in chronic periodontal disease." *Community Dentistry and Oral Epidemiology* 1989, 17: 245-247.
3. American College of Chest Physicians: "Smoking and health: physician responsibility." *Chest* 1995, 108: 1118-1121.
4. Lynch B., Bonnie R.: *Growing up tobacco free*. Washington, DC, National Academy Press 1994.
5. An M., Johnson G., Kaldahl K., Kalkwarf K.: "The effect of smoking on the response to periodontal therapy." *J. Clin. Periodontol* 1994, 21: 91-97.
6. Pabst M., Pabst K., Collier J., Coleman T., Lemons-Prince M., Godat S., Waring M., Babu J.: "Inhibition of neutrophil and monocyte defensive functions by nicotine." *J. Periodontol* 1995, 66(12): 1047-1055.
7. MacFarlane G., Herzberg M., Wolff L., Hardie N.: "Refractory periodontitis associated with abnormal polymorphonuclear leukocyte phagocytosis and cigarette smoking." *J. Periodontol* 1992, 63(11): 908-913.
8. Raulin L., McPherson J., McQuade M., Hann B.: "The effect of nicotine on the attachment of human fibroblasts to glass and human root surfaces in vitro." *J. Periodontol* 1988, 59(5): 318-325.
9. Linden G., Mullally B.: "Cigarette smoking and periodontal destruction in young adults." *J. Periodontol* 1994, 65(7): 718-723.
10. Sparrow D., Beausoleil N., Garvey A., Rosner B., Silbert J.: "The influence of cigarette smoking and age on bone loss in men." *Archives of Environmental Health* 1982, 37(4): 246-249.
11. Bergstrom J., Floderus-Myrhed B.: "Co-twin control study of the relationship between smoking and some periodontal disease factors." *Community Dent and Oral Epidemiol.* 1983, 11: 113-116.
12. Martinez-Canut P., Lorca A., Magan R.: "Smoking and periodontal disease severity." *J. Clin. Periodontol* 1995, 22(10): 743-749.
13. Bergstrom J., Eliasson S.: "Noxious effect of cigarette smoking on periodontal health." *J. Periodont. Res.* 1987, 22: 513-517.
14. Goultschin J., Cohen H., Donchin M., Brayer L., Soskolne W.: "Association of smoking with periodontal treatment needs." *J. Periodontol* 1990, 61: 364-367.
15. Bergstrom J., Eliasson S., Preber H.: "Cigarette smoking and periodontal bone loss." *J. Periodontol* 1991, 62(4): 242-246.
16. Osterberg T., Mellstrom S.: "Tobacco smoking: a major risk factor for loss of teeth in three 70 year old cohorts." *Community Dent and Oral Epidemiol* 1986, 14: 367-370.
17. Holm S.: "Smoking as an additional risk for tooth loss." *J. Periodontol* 1994, 65(11): 996-1001.
18. Haber J., Kent R.: "Cigarette smoking in periodontal practice." *J. Periodontol* 1992, 63(2): 100-106.
19. Preber H., Bergstrom J.: "Effect of cigarette smoking on periodontal healing following surgical therapy." *J. Clin. Periodontol* 1990, 17: 324-328.
20. Thun M., Day-Laly C., Calle E., Flanders W., Heath C.: "Excess mortality among cigarette smokers: changes in a 20 year interval." *American Journal of Public Health* 1995, 85(9): 1223-1229.
21. Tonette M., Pini-Prato G., Cortellini P.: "Effect of cigarette smoke on periodontal healing following GTR in infrabony defects." *J. Clin. Periodontol* 1995, 22: 229-234.

22. Preber H., Bergstrom J.: "The effect of non-surgical treatment on periodontal pockets in smokers and nonsmokers." *J. Clin. Periodontol* 1985, 13: 319-323.
23. McLaughlin W., Lovat F., Macgregor I., Kelly P.: "The immediate effects of smoking on gingival fluid flow." *J. Clin. Periodontol* 1993, 20: 448-451.
24. Baab D., Oberg P.: "The effect of cigarette smoking on gingival blood flow in humans." *J. Clin. Periodontol* 1987 14: 418-424.
25. Bergstrom J., Preber H.: "Tobacco use as a risk factor." *J. Periodontol* 1991, 65(5): 545-550.

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Bonnie Craig, Assistant Professor, is the Director of UBC's Dental Hygiene Degree Completion Program and Course Coordinator of the 2nd year Periodontics course in the DMD Program.

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ARTICLE:

The Use of Tetracycline-Containing Controlled-Release Fibres in the Treatment of Refractory Periodontitis

Authors: Betty Vanderkerkhove, Marc Quirynen, Daniel van Steenberghe

Journal: *Journal of Periodontology* Apr/97

There is a wealth of evidence to support the efficacy of scaling, root planing and optimal oral hygiene in the treatment/arrest of periodontal diseases. Some clients however, do not respond to repeated treatment even with well-controlled maintenance. This article identifies those clients who are unresponsive to therapy, and who have a generalized pattern of attachment loss concomitant with an altered host response, as refractory. Clients in this category often progress to treatment with a systemically delivered antimicrobial. But, some studies evidence poor results because the agent was unable to reach the appropriate site in adequate concentration, or was not able to be maintained locally for a long enough period of time. Even with high dosages of systemic drugs, clinical results indicated that only low to medium concentrations of the medication ever reached the pocket. Antimicrobial rinses do not penetrate the depth of the sulcus and even those that are delivered directly to the pocket are washed from the sulcus quickly. The ideal delivery of an antimicrobial agent would combine high concentration of the active element with accurate, prolonged placement in the specific disease sites.

This study was designed to evaluate the short-term efficacy and safety of tetracycline impregnated fibres in treating refractory periodontitis. Twenty clients were selected for this trial. They evidenced bleeding probing depths of 5 mm or greater (and at least one 7 mm or greater depth) that did not respond to over three years of rigorous therapy including scaling and root planing, surgery, systemic antibiotics or combinations thereof. This was termed the control period. The experimental period was defined as the placement of 25% tetracycline-impregnated fibres in one or more refractory periodontal pockets, for 10 days. Probing depths (PD), clinical attachment levels, gingival recession and bleeding on probing were assessed at baseline, one, three and six months following therapy.

In all areas of periodontal measurement, improvement was evidenced. All sites (except one fractured tooth) demonstrated stable or reduced PD. Some PD were reduced by as much as 7 mm. After six months, the mean reduction in PD was 2.6 mm. This is consistent with results from the only other study on refractory periodontitis treated with

fibres containing tetracycline. The authors indicate that their superior results to other tetracycline fibre studies may be the result of treating all residual pockets, rather than a split mouth study design. This may influence the overall bacterial load and thus, host response.

This study supports that the refractory sites were transformed into stable locales. The authors speculate that the tetracycline brings about these remarkable results through its antibacterial effect, its ability to inhibit the activity of collagenase (which breaks down gingival collagen/connective tissue) and by stimulating fibroblast attachment to the root surface. Further, tetracycline binds to dentin and is therefore substantive.

The authors conclude that this treatment modality provides pocket depth stability in unresponsive clients for at least six months. They caution however, that as these clients are refractory in nature they may worsen in the future. Although the procedure is well tolerated by clients, the study clinicians warn that the technique is time-consuming.

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ARTICLE:

Sustained Local Delivery, of Chlorhexidine in the Treatment of Periodontitis: A Multi-Center Study

Authors: W.A. Soskone, P.A. Heasman, A. Stabholz, G.J. Smart, M. Palmer, M. Flashner, H.N. Newman

Journal: *Journal of Periodontology* Jan/97

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Although the success of conservative debridement through scaling and root planing (SRP) in treating periodontal diseases is well documented, deep pockets, defect anatomy and the varying clinical abilities of clinicians to access them has led to the development of antimicrobial agents for local or systemic delivery. While some systemic antibiotics have proved successful in adjunctively treating chronic inflammatory diseases such as juvenile or refractory periodontitis, short-term local pocket irrigation has not been proven to have a sustained effect.

Concerns with bacterial resistance developing through systemic antibiotic use have led to new developments in the local delivery of antimicrobials. Therapeutic gels and impregnated fibres have been developed to allow sustained delivery to the diseased sites, with minimal systemic effect.

This multi-centered, controlled and blinded study randomized 118 clients with moderate periodontitis (5–8 mm probing depths accompanied by bleeding). Using a split-mouth design, both control and test groups received SRP. The test group additionally was provided with subgingival irrigation of Chlorhexidine (CHX) at baseline and at three months. The clinical measurements recorded at baseline, one, three and six months included probing depth (PD), clinic attachment level (CAL). [This is defined as probing depth plus gingival recession], bleeding on probing (BOP) and indices of gingivitis, plaque and staining. SRP was standardized through calibrating the clinicians prior to the start of the trial, and by confining the therapy time-frame to one hour.

The results indicated that those clients who received controlled subgingival irrigation with CHX, in addition to SRP, had significant reductions in PD and improved CAL when compared with the control group. PD decreases were in greater evidence at the six-month visit (than at the three-month visit). The authors believe that "this indicates that the additive effect of the CHX is due to a long-term effect beyond that obtained by SRP alone". Further, this study indicated that the results achieved were analogous to those that would be obtained by a skilled clinician using local anaesthesia and unlimited SRP time.

The article refers to numerous other studies that used different antimicrobial agents or methods for intrapocket delivery and concludes that the type of agent is not crucial to the clinical result. The advantage of CHX however, is that it does not provoke bacterial resistance. What the article emphasizes and must be clearly conveyed is that the most critical element in determining treatment efficacy is the length of time the pocket is exposed to the antimicrobial drug. Some evidence suggests that the daily administration of subgingival CHX irrigation would provide a more lasting effect. The authors cited a study indicating that a steady six to nine day delivery provided long-lasting antimicrobial and clinical outcomes. It appears that if the irrigants are delivered over short periods of time the tissues require repeated exposure.

The article concludes with the finding that CHX is a safe and easy-to-apply therapy that effectively augments the effects of SRP alone in the treatment of periodontal diseases.

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CDHA'S 8th ANNUAL PROFESSIONAL CONFERENCE

EDITORIAL

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EFFECTIVE COMMUNICATION AND MARKETING FOR HEALTH CARE PROFESSIONALS

Your professional training did not include the development of skills to influence other people — patients, patient families, colleagues, other members of a working team, administrators and superiors, for example — yet these people determine your ability to both do your job and manage your career. Marketing and communication specialists have learned that the best way to influence other people is to speak to their issues in their language.

For the dental hygienist this means first of all learning more about the perspectives and priorities of each of the groups and individuals you want to influence. For example, you may have a patient who is a young parent with limited education and low socio-economic status, who does not give priority to oral health. Where do appearance, oral comfort and investment in oral health fit in their world view? Ask yourself these questions. What do they care about? How can you best deliver what matters to them? How can you position yourself so that you are playing a helpful and realistic role in their oral well-being?

What about an employer or business partner who talks only of costs, profit and efficiency? Ask yourself what they are trying to achieve with their practice? How can you help them do that? How can you be seen to be helping them reach their goals? What do you have to give up to do that? What don't you have to give up?

You can only get answers to these questions from the people involved. And you will only get useful information by asking in a genuinely caring, receptive way. If people feel they are being judged or that there is only one right answer, you will not get the information you need from them. So ask. Put yourself in their shoes. See oral health from their perspective.

Once you have "become" them, you are ready to communicate. Communication takes many forms—talking to them; writing a letter to introduce yourself, or a report to present your idea or provide information; guiding them on a tour of equipment or processes; making a informational presentation, perhaps even drafting an educational leaflet to explain the benefits of a procedure or to describe the dental hygienists' role. No matter what communication medium you use, it is important that you maintain sensitivity to the audience's perspective throughout your communication. Use their language. Use examples that ring true to them. Keep them involved and be aware, so you get their reactions immediately and can adjust your communication accordingly.

It is important to handle yourself with calm confidence. Whatever their relationship with you, handle yourself as an equal to them. That means mutual respect in all communication, acknowledgment of the validity of what they say or write, and open listening. Effective communication and marketing involves advanced listening skills and grounded openness. Increasing your own professional self-confidence will contribute substantially to your effectiveness. People who assume they will be respected, will be respected. When you have this attitude to marketing — an open, receptive inquiry into your target group's perspective and a calm, grounded, confident posture — you can influence any group or individual you want, using any communication medium at your disposal.

The last factor to consider is time. You will not change attitudes in one conversation or one report. You will work through a progressive relationship of building trust, establishing open communication and adapting to the situation as it changes. They will hear you if you hear them — genuinely hear them. Try it experimentally, even if you don't think it will work. Go into a situation in which you want to influence a person. Learn everything you can about their perspective. Show appreciation for their values, issues, needs and desires. Watch what happens. That's marketing. That's effective communication. That's what makes it possible to fulfill your professional priorities and nurture your professional aspirations: calm, grounded, receptive dialogue with those around you. Welcome to the world of effective communication and marketing.

**By Margaret Archibald, APR Speaker
at the 1997 Annual Conference in
Ottawa.**





DENTAL HYGIENISTS: PROFESSIONALS — COAST TO COAST

The CDHA 8th Annual Professional Conference provided an opportunity for Canadian dental hygienists to meet in the nation's capital — Ottawa.

This annual event has become the one time each year to gather to make new friendships and renew old ones, set new directions, and feel the strength of shared experiences and future destinations.

The conference began with your CDHA Volunteer Board meeting for three days to address national affairs, meet with Provincial Presidents, Representatives and DH Registrars.



Outgoing CDHA President Sue MacIntosh (left) with incoming National President, Maria McKenzie (ADHA), and Judy Clarke (CDHA).



CDHA Board at Joint Planning Session.



Provincial Associations met at Joint Planning Session.



Provincial Presidents and Representatives.



Participants at Educators Meeting held prior to conference opening.



CDHA Board of Directors.



Parting CDHA Directors honored — (left to right) Patricia Noble, Stephanie Nagle, Sue Raynak, Aileen Seed and Margery Forgay.

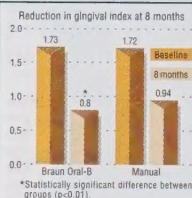
CONFERENCE HIGHLIGHTS: JUNE 27-29 1997, OTTAWA

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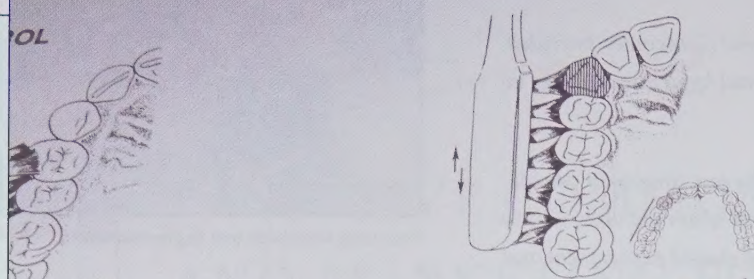




Dual POWER TIP®
Bristles on ULTRA-speed oscillating brushhead are designed to reach deep between teeth and penetrate below the gumline.



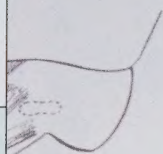
The Braun Oral-B® Plaque Remover is clearly superior to a manual toothbrush in removing plaque and reducing gingivitis and bleeding.¹



Step 6: Lift brush and move it anteriorly to the premolar and canine area.

ft-to-medium toothbrush
isal plane with the "tip"
he last molar.

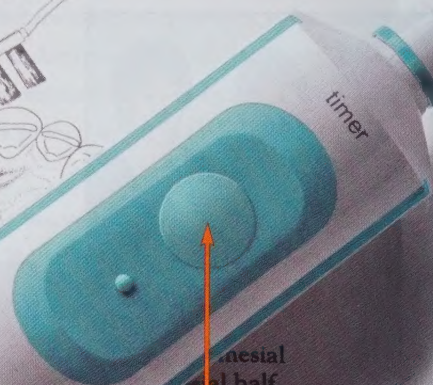
Step 7: Place the brush so that its "heel" is still distal to the canine prominence to clean the premolars and the distal half of the canine.



gingival margin and
45° to the long axis

Step 8:

ultra plaque remover

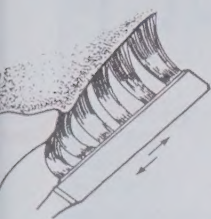


for the arch, covering
the whole maxillary

Step 1:
Press here

Step 10: Engage the brush at a 45° apical angle in the molar and premolar areas, covering three teeth at a time.

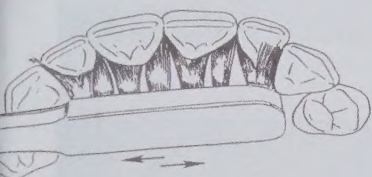
ack-and-forth
of the bristles.



tion the brush-
the palatal s-
it vertically to
anterior teeth.

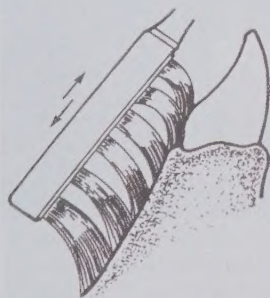
the brush into the gingival
normally at a 45° angle to the
tooth, using the anterior portion
palate as a guide plane.

ivate the brush with 20 short up-and-down
strokes.



the shape of the arch permits, insert the brush
horizontally between the canines with the bristles
angulated into the gingival sulci of the anterior
teeth.

clean the mandibular teeth in the same way as the
maxillary teeth, section by section, 20 strokes in
each position.

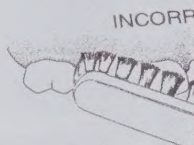


Insert the brush vertically in the anterior lingual
region, using the lingual surface of the mandible as
a guide plane and with the bristles angulated into
the gingival sulci.

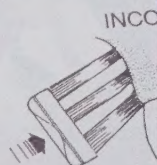
If space permits, insert brush horizontally between
the canines.

Step 19: Press the bristles firmly
against the tooth with the ends as deeply
into the gingival sulci and fissures.

Step 20: Activate the brush with
20 short up-and-down strokes, advancing
the brush section by section over the
posterior teeth in all fields.



A: Incorrect brush
position of elbow
by raising elbow



B: Incorrect b-
instruction
under visu

C: Incon-
instr-
unde

Why should patients rely on a manual when superior results can be automatic?

No matter how much hands-on instruction they get, most patients may never master the manual. Just ask the three-out-of-four adults who have gingivitis.

Fortunately, there's the Braun Oral-B® ULTRA Plaque Remover. Its advanced technology makes it simple, yet remarkably effective. In fact, over 8,000 patient weeks of clinical research and six years of market experience have proven Braun Oral-B Plaque Removers to be significantly better at removing plaque and stain and reducing gingivitis than manual brushing.² And ULTRA is just as gentle, thanks to its soft, end-rounded bristles.

Perhaps that's why Braun Oral-B is the world's best-selling brand of power-assisted plaque removers.³ And why it's recommended by more dentists and hygienists than any other brand⁴ and preferred by patients 2:1 over sonicare®.⁵ For more information, or to place an order, contact your authorized Oral-B dental distributor. Or call 1 800 268-5217 ext. 1. And take the first step towards superior results.

BRAUN

Oral-B®

CDHA'S 8th ANNUAL PROFESSIONAL CONFERENCE

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Flags at the Opening Ceremonies.



Meet the President: Sue MacIntosh with Mike Carbone.

The conference began with pomp and ceremony including the Royal Canadian Mounted Police and the flags of all the provinces and our country. Greetings from respective organizations and the government of Canada were extended to all delegates.

The afternoon session "Let's Talk" took the format of a talk show with host Mike Carbone. Mike introduced the audience to the latest trends and changes affecting the dental hygiene profession through the introduction of special guests. It proved to be an outstanding beginning to a memorable weekend.



The RCMP rope in Mike Carbone.



Conference Chair, Joan Degan, and Opening Session Organizer, Diane McCambly.



Mr. Carbone interviews guests (left to right), Penny White, Arlynn Boodie and Barbara Cresson.



Registration Central.



Questions from the audience.

OPENING CEREMONIES



Networking between lectures.



CDHA Student Scholarship award winners: Mary Ann Klippenstein and Marie Jaworski (Manitoba).



President's Reception — Everyone's invited!



Music and a Magician!

Ottawa

JUNE 27–29, 1997



Sight-seeing in Ottawa — The National Gallery.

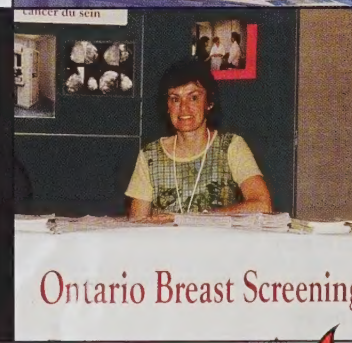


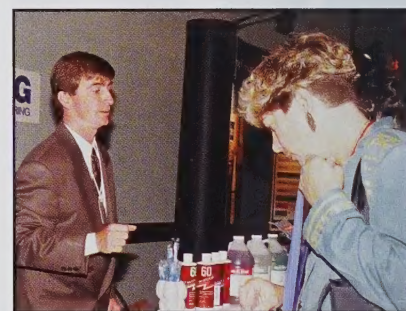
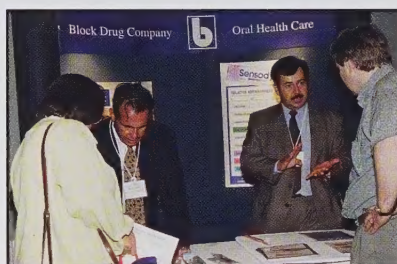
Table clinics.



CDHA'S 8th ANNUAL PROFESSIONAL CONFERENCE

CDHA gratefully acknowledges the support of the following companies participation in this year's Commercial Table Clinics:

Arcona Health Inc.
Ash Temple Ltd.
Biotene Canada Div. Of Bolton Dental Mfg. Inc.
Block Drug Company (Canada) Ltd.
Canadian Sugar Institute
Cetylite Industries, Inc.
Colgate Oral Pharmaceuticals
Dairy Farmers of Canada
DDS Dental Supply Inc.
Denpro Associates Inc.
Dentsply Canada Ltd.
Germiphene Corporation
Glide Products by Gore
Henry Schein Canada
Heoscht Marion Roussel Canada
Hi-Freidy Manufacturing
Interplak
John O. Butler Company
Medical Mart Supplies Ltd.
Micrylium Lab/Patterson Dental
Oasis Dental Group Inc.
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Pascal Dental
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Pro Dentec Canada
SciCan
Septodont of Canada Inc./Novocol
Sonicare
Sulcabrush Inc.
Teledyne Water Pik Canada
Ultravena Hager Worldwide
Uniform People
Warner Lamert — Consumer Healthcare
Young Dental



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Reaching Smokers with Lower Educational Attainment

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While the last few decades have seen an overall decline in smoking among Canadians, some smokers have been particularly resistant to quitting or cutting down. Higher smoking rates are observed among individuals with lower levels of education. Moreover, smoking rates are not the only aspect of tobacco use that varies with a smoker's level of education. It also affects the likelihood of smokers attempting to quit or cut down, their reasons for quitting and where they draw their information about smoking.

Because cigarette smoking is one of the most common and preventable causes of illness and death, factors that influence smoking rates must be considered when designing public health programs and allocating health care dollars. Educational attainment is one such factor linked to a wide range of smoking-related behaviors and attitudes.

Smoking rates down

Between 1977 and 1994, smoking rates declined among men and women aged 20 and over, though the decline was more pronounced among men. The percentage of men who smoked cigarettes daily or occasionally fell to 33% from 46%¹, an average annual percentage change (AAPC) in rates of -2.22%. Despite the sharper decline in smoking rates for men, it remained higher than women's rate which decreased more slowly to 29% from 35%¹, an AAPC in rates of -1.05%.

Generally, people with lower levels of schooling are more likely to be smokers. While the overall trend in smoking rates between 1977 and 1994 was down among both men and women regardless of education, the pace of decline varied. For men, smoking rates took a downturn at all education levels.

In contrast, women's smoking rate declined primarily among the university-educated; this group's AAPC (-3.18%) also had the sharpest drop. For women, the two lowest educational attainment groups had the smallest declines in smoking rates. The AAPC for those with elementary education or less was -0.21%, and for those with some or completed high school, it was -0.31%. In fact, women with some or completed high school education had the highest smoking rates: 38% in 1977 and 36% in 1994. Similarly, men with the smallest decline in rates — those with elementary schooling or less — also had the highest smoking rates among men.

Because smoking rates declined more quickly among those with more education than among those with less, the gap in smoking rates between people with high levels of education and those with low levels widened since the mid-1970s. For men, the difference between the highest and lowest smoking rates rose from 26 to 29 percentage points between

1977 and 1994, while for women, it doubled from 11 to 22 percentage points. This pattern of a widening gap between higher and lower education levels is not unique to Canada.²

Kicking the habit contributes to lower smoking rates

Two events can trigger a downturn in smoking rates: people do not start smoking or smokers quit. Much of the overall decline in rates since 1977 has been attributed to smokers kicking the habit. By 1994, of all Canadians aged 20 and over who had ever smoked, about half had quit. Higher percentages of people with high levels of education had quit than those with low levels. This finding mirrored the faster declines in smoking rates among those with high levels of education. Smokers who had not gone beyond high school, particularly women, were the most resistant to quitting. Among people who had ever smoked, just 36% of women and 43% of men with elementary school or less had quit by 1994. In contrast, 66% of women and 64% of men university degree-holders who had ever smoked quit.

Concern for future health was cited by 51% of men and 44% of women as the leading reason they stopped smoking. Cost ranked a distant second (13% of men and 12% of women). There was no clear-cut pattern in reasons for quitting by educational attainment. However, former smokers with higher levels of education were more likely to cite social and family pressures as factors in their decision to quit.

Smoking restrictions reduce smoking

Prohibiting or discouraging smoking in various settings can reduce the prevalence of smoking. For example, although few former smokers

Average annual percentage change (AAPC) in smoking rates, by sex and educational attainment, Canada, 1977 to 1994

	Smoking Rate (%)		AAPC in Rate (%)
	1977	1994	1977 to 1994
Both Sexes	40	31	-1.66
Elementary or less	44	37	-0.70
Some or completed high school	43	38	-0.88
Some postsecondary	37	31	-1.20
Postsecondary certificate or diploma	36	30	-1.20
University degree	27	16	-2.81
Men	46	33	-2.22
Elementary or less	54	47	-0.93
Some or completed high school	50	40	-1.47
Some postsecondary	39	34	-1.43
Postsecondary certificate or diploma	37	31	-1.58
University degree	28	18	-2.48
Women	35	29	-1.05
Elementary or less	33	30	-0.21
Some or completed high school	38	36	-0.31
Some postsecondary	34	29	-0.73
Postsecondary certificate or diploma	35	29	-0.97
University degree	27	14	-3.18

Note: Figures are based on weight age-standardized rates for the population aged 20 and over.

Source: see Background, "Data Sources".

reported that smoking restrictions had affected their decision to quit, previous research has shown that the introduction of restrictions in the workplace reduces the number of cigarettes smoked per day.³ According to the NPHS, higher percentages of smokers with high levels of education encountered smoking restrictions than those with low levels, possibly because the latter are not as likely to be in situations where they cannot smoke.

People at all educational levels most frequently mentioned public places as having smoking restrictions (62%). Workplace prohibitions were also common, but exposure to them varied by the smokers' level of education: 38% of smokers with elementary school or less reported restrictions at work, compared with 48% of those with university degrees. The reason for this may lie in the fact that place of work and level of education are also linked. Workers with higher levels of education are more likely to be in white-collar occupations and work in office buildings. Office buildings are more likely to have prohibited smoking than workplaces in industries such as construction or transportation where most work may be done outdoors.

Smoking restrictions with friends and family were even more closely associated with levels of education. For instance, just 10% of smokers with elementary school or less reported restrictions in their own or friends' homes; for those with university degrees, the percentage was 27%. As well, higher proportions of university-educated smokers reported transportation-related restrictions, which may be attributable to smoking bans in private vehicles owned by friends and family. These patterns are consistent with the tendency for former smokers with higher levels of education to acknowledge social and family pressures as having influenced their decision to quit.

Mass media deliver the message

Media advertising is an important component of the national strategy to discourage smoking. In fact, most smokers have obtained information about smoking and tobacco use from the mass media. Over half of the male and female smokers reported that television, radio or newspapers were a source of such information. The next most frequently mentioned source was doctors, nurses and other health professionals.

Although the major source of information about smoking for smokers at all levels of education was the mass media, its prominence varied by level of education. Those with lower levels of education were the least likely to mention the mass media. This group of smokers was also less likely than others to mention pamphlets, books or magazines. In contrast, health professional ranked prominently as sources of information about smoking among groups with lower levels of education, but their influence was less among smokers with higher levels of education.

One source of information that smokers cannot avoid is the health warnings on cigarette packages. Not surprisingly, awareness of these messages was almost universal. However, recollection of specific messages varied with the smoker's level of education. For instance, comparatively few women with elementary education or less recalled messages about the relationship between smoking and life expectancy (38%), heart disease (35%) or pregnancy (66%), while men and women with a university degree were more aware of these health messages. Although awareness of health messages on cigarette packages improved with higher levels of education, there were exceptions. For instance, among male smokers, there was little difference by level of education in recollection of smoking messages about lung cancer and heart disease.

Less educated were less likely to quit or cut down

The NPHS presents some evidence that antismoking messages are heeded. A substantial share of smokers had tried in the year before they were interviewed: 39% of men and 42% of women. An almost equal number smoked less than they had 12 months earlier. Nevertheless, those whose smoking rate was highest — women with some or completed high school — were the least likely women to have tried to quit (37%) or cut down (38%). In comparison, another group of women with a high smoking rate — those with elementary education or less — was the group most likely to have tried to quit (53%) or to have cut down (50%).

The men least likely to have tried to quit smoking were those with elementary education or less (33%); these men also had the highest smoking rate. Yet of all male smokers, they were the most likely to have cut down (55%).

Conclusions

The trend toward not smoking has affected all groups of men and women, but not equally. Although smokers with lower levels of education (particularly women) have been most resistant to quitting, the results of the NPHS show that substantial numbers of them tried to quit or cut down during the previous year. These smokers may find quitting a particular challenge, as they were among the groups who encountered the fewest smoking restrictions.

Health concerns are the overriding factor in a smoker's decision to quit. However, the most resistant smokers were less likely than others to recall warnings on cigarette packages about the relationship of smoking to heart disease, life expectancy and potential harm to a baby if the mother smokes while pregnant.

While television, radio and newspapers were cited by all groups as the major sources of information about smoking, smokers with low levels of education indicated the mass media were less prominent

than among smokers with higher levels of education. This group was also less apt to get information from pamphlets, magazines, or books, but relied on the advice of health professionals more than smokers with higher levels of education. Although few former smokers stopped smoking due to their physicians' advice, most visited their doctor regularly, providing an opportunity for intervention by the medical profession. Over 80% of smokers had consulted a physician in the previous year for one reason or another.

Prevalence of smoking was affected by restrictions in various settings. High smoking rates among people with the lowest levels of education may be associated with their milieu — at home, at work, or with friends — in which smoking is either not discouraged or prohibited. Similarly, low smoking rates among individuals with high levels of education may be related to the restrictions they encounter. Successful attempts to quit smoking also vary with education and are linked with smoking restrictions.

Smokers' sources of information about tobacco use, 1994–95

Sources of information	All levels of information	Elementary or less	Some or completed high school	Some post-secondary	Post-secondary certificate or diploma	University degree
%						
TV/radio/newspapers	57	55	55	59	59	68
Health professional	32	43	33	33	28	26
Pamphlets/ magazines/books	32	30	30	32	36	45
Family	16	15	16	16	14	15
Friends	10	6	11	10	9	10

Note: Respondents were able to indicate more than one source.

Source: Statistics Canada, National Population Health Survey, 1994–95.

Canadian Social Trends Backgrounder

Data Sources

The longitudinal National Population Health Survey (NPHS) was designed to measure the health status of Canadians and discover more about the determinants of health. Detailed data on smoking-related behavior and attitudes were collected between June 1994 and June 1995 in a Health Canada-sponsored supplement to the NPHS. The supplement's sample size was 13,400 respondents (12,010 aged 20 and over), and the survey achieved a 91% response rate. Trends in smoking rates are based on data obtained from surveys conducted between 1977 and 1995.¹ In these surveys, "smokers" were persons who were smoking cigarettes either daily or occasionally at the time of the survey.

Analytical techniques

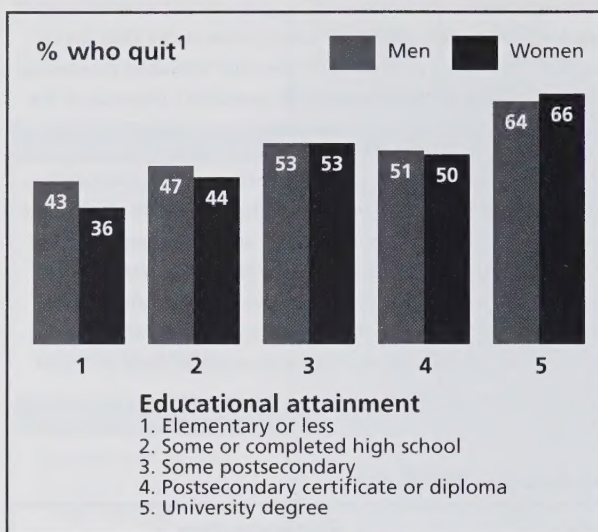
Because this analysis examines the association between smoking and educational attainment, it focuses on the population aged 20 and over, most of whom have completed their formal education. The age distribution of the populations in the education categories varies substantially, so age-standardized smoking rates were calculated using the total 1994 population of Canada.

Changes in annual age-standardized smoking rates were determined by calculating the average annual percentage changes (AAPC) for the rates from 1977 to 1994.²

1. Labour Force Survey smoking supplements (1977, 1979, 1981, 1983, 1986), Canada Health Survey (1978–79), Health Promotion Surveys (1985, 1990), National Alcohol and Drug Survey (1989), General Social Survey (1991), National Population Health Survey (1994–95).

2. The AAPC is $(e^{\beta}-1)$, where β is the slope from a regression of log rates with year as the independent variable.

University degree-holders who had smoked were most likely to have quit, 1994-95

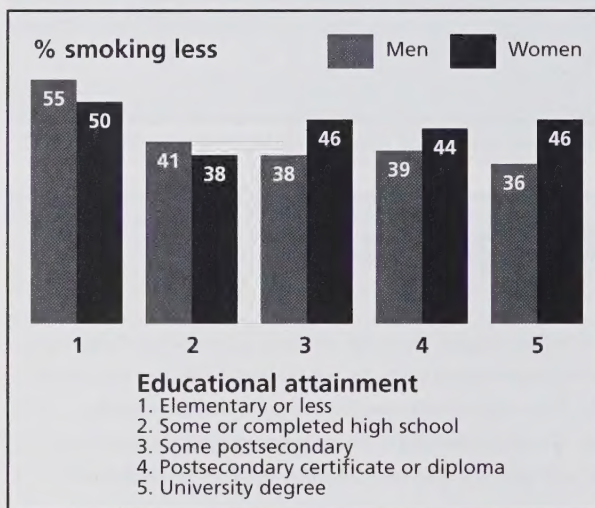


¹ Percentage of people who have ever smoked, who have quit.

Note: Based on population aged 20 and over. Percentages are age-standardized.

Source: Statistics Canada, National Population Health Survey, 1994-95.

Smokers with elementary education or less were most likely to have reduced their smoking in the previous year, 1994-95

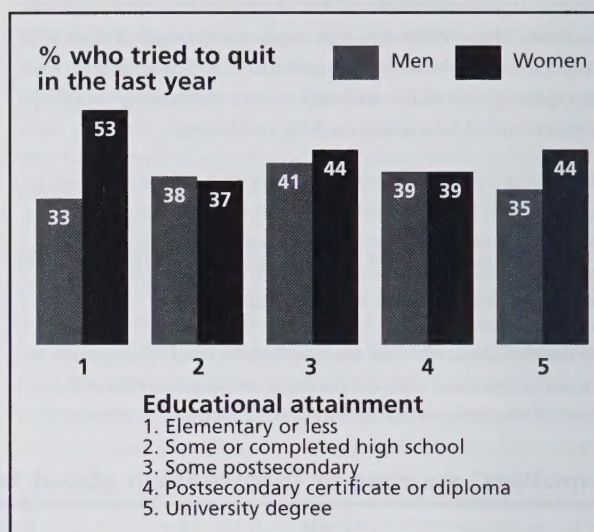


Note: Based on population aged 20 and over. Percentages are age-standardized.

Source: Statistics Canada, National Population Health Survey, 1994-95.

Current data show variations in the decline of smoking by sex and education. Smokers' sources of information about smoking and tobacco, exposure to smoking restrictions, and awareness of health messages on cigarette packages all vary by sex and education. This suggests that these differences should be taken into account in designing and developing effective health promotion and smoking cessation programs. These findings also indicate that alternative approaches may be required to reach smokers with lower levels of education.

Women with elementary education or less were most likely to have tried to quit in the previous year, 1994-95



Note: Based on population aged 20 and over. Percentages are age-standardized.

Source: Statistics Canada, National Population Health Survey, 1994-95.

Of course, this picture of smoking is incomplete. By age 20, most people who are going to smoke have already started. Much of the antismoking initiative is directed at young people to discourage them from becoming smokers. Studies of the smoking behaviour of people younger than age 20, particularly the longitudinal studies made possible by the NPHS, may shed light on the processes of smoking initiation and cessation.

References

1. Age-standardized smoking rates.
2. J.P. Pierce, M.C. Fiore, T.E. Novotny et al., "Trends in cigarette smoking in the United States: Educational differences are increasing," *Journal of the American Medical Association*, Vol. 261, No. 1, 1989.
3. W.J. Millar, "Evaluation of the impact of smoking restrictions in a government setting," *Canadian Journal of Public Health*, Vol. 79 no. 5, September/October 1988.

This article was adapted from "Reaching Smokers with Lower educational Attainment," *Health Reports, Statistics Canada, Catalogue no. 82-003-XPB*, Autumn 1996.

For information on the smoking habits of youth, see "Youth smoking in Canada", *Canadian Social Trends*, Winter 1996.

Wayne J. Millar is a senior analyst with Health Statistics Division, Statistics Canada.

Statistics Canada information is used with the permission of the Minister of Industry, as Minister responsible for Statistics Canada. Information on the availability of the wide range of data from Statistics Canada can be obtained from Statistics Canada's Regional Offices, its World Wide Web site at <http://www.statcan.ca>, and its toll-free access number 1-800-263-1136.

Statistics Canada, *Canadian Social Trends*, Catalogue No. 11-008, Summer 1997, pages 18-23.

PROBING THE NET

By Karen Wolfe, Dip.D.H.

Seasons Greetings to all you wonderful, hardworking colleagues across our fair country. It is suffice to say I was successful in getting online with Medline and here is how: You can connect with the National Library of Medicine at <http://www.nlm.nih.gov/>

Once you successfully contact your host click on the oval icon *Free Medline* then choose between Pub Med or Internet Grateful Med which will direct your search options. Type in your topic preference in the window and enjoy updating yourself with abstracts and citations from researchers around the globe. The citation reports seem to be the most helpful but you can change this presentation by clicking the arrow beside the display window. (Another way to access Medline is via DHNet under the Education icon).

Since most of you are spending your free time shopping for those you love I thought I would take time to recap many of the wonderful sites I have been sending your way over the past year.

I've been reinvestigating some of the old addresses and have made some new discoveries. For instance at the Dental X Change site the address is all that remains of the old page because the layout is completely new. Be sure to check out *PandG's Dental Resource Net* site for great resources on Patient Education, an online Library, CE information, Practice Management topics and much more. The address is (and was) <http://dentalxchange.com>

Dentistry Online, also, has updated their web page with more sites than I have got time to check out, but for you voracious readers — help yourselves! The address is <http://www.priory.co.uk/journals/dent.htm>

Here are a few more sites:

<http://www.cda.org/public.pubhsrv.html/>

<http://www.sybertooth.com>

<http://www.dentalsite.com/>

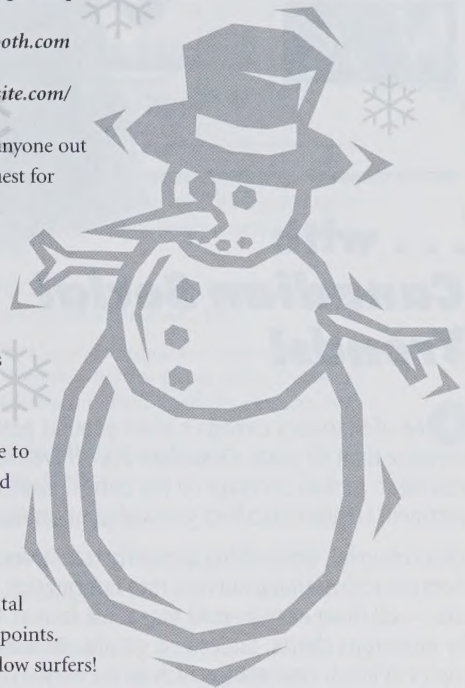
Now I would like to ask anyone out there to assist me on a quest for a fellow Dental Hygienist.

This colleague is looking for online CE courses.

I have been unable to connect with any thus far but I thought perhaps someone out there has discovered something I have, so far, been unable to locate. If you have, would you please E-mail me with the address(es) of prospective Online CE courses targeted to Dental Hygienists for CE credit points. I await your response fellow surfers!

Merry Christmas to you all and a Very Happy New Year and may the Giver of Peace find your homes this season.

My E-mail address is rwolf@atcon.com



A NEW FORUM... (continued from page 203)

A steering committee consisting of regional representatives (Terry Mitchell from the Atlantic provinces, Gisele Johnson from Quebec, Susan Raynak from Ontario, Laura MacDonald from the Prairie provinces, and Susanne Sunell from the Western provinces) was formed to establish the constitution and by-laws of the organization in consultation with all stakeholders. Task Groups were also formed to focus on specific aspects of the new organization including membership, programs and services, communication, management and coordination, structure and governance, and alliances and partnerships. There are lots of opportunities for involvement, so please let us know how you would like to participate.

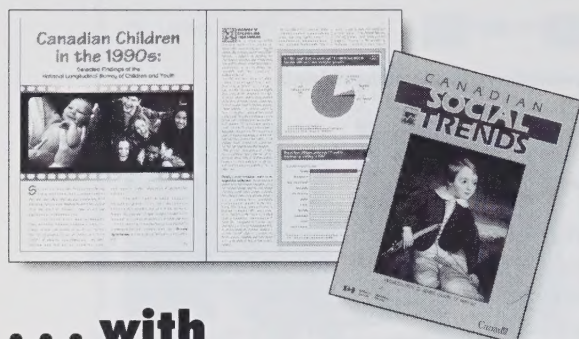
We realize that information about the first meeting may not have reached all dental hygiene educators or those with an interest in dental hygiene education. Over the coming year we will broaden our communication channels to promote everyone's involvement in the dialogue we are initiating. One of the key issues discussed at the June meeting was the desire of educators to discuss issues and

share information. We hope to create cost-effective vehicles through which a dialogue can be initiated and sustained. To this end we are investigating the establishment of an e-mail connection which would allow members to speak to all DHEC members simultaneously. Participants would have the opportunity to ask each other questions, make comments, or perhaps just listen to the discussion of others. We will keep posted as we pursue this possibility. Please mark your calendars for an educators meeting and workshop prior to the CDHA Professional Conference in June 1998; this will be another landmark event!

We have started on another journey of growth and development. Through dialogue we hope to broaden our horizons, share our ideas, reflect on our current practices, and enhance our teaching and learning environments. We invite you to participate in this adventure.

If you have any questions or comments, please contact the Dental Hygiene Educators Canada (DHEC) Steering Committee by e-mail at ssunell@vcc.bc.ca

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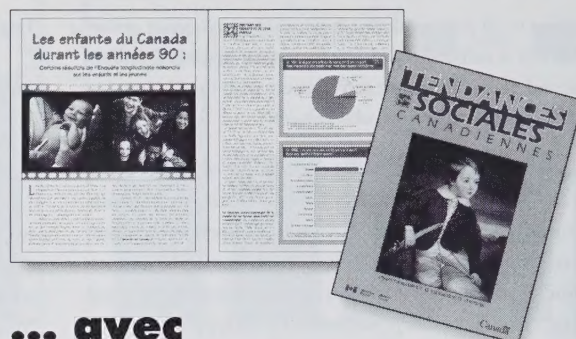


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PRACTICE PROFILE

Featuring Paula McAleese, Dip.D.H.

On May 6, 1997 I opened a free-standing dental hygiene office in Abbotsford, British Columbia. This type of practice setting was not a option (but probably it was always a dream) when I graduated from the University of Alberta in 1967. After 30 years of providing dental hygiene services in dentist's offices, it is exciting and satisfying to provide care in an atmosphere I have created. I feel privileged to serve the public in a new practice setting in which I can encourage interaction and dialogue. Changing to self-employment has not been a scary move. Over the years I have experienced many different employment situations and feel positive that the care was appreciated by the clients and, for the most part, by the dentist and staff.

Clients/patients have openly expressed their recognition and appreciation of the very positive role dental hygienists have played in maintaining their oral health. This important message, which I am taking this opportunity to pass on to other dental hygienists, has become very obvious since I have been in my new office.

What was my motivation to change? The need to grow, my age, issues around job security and health factors all played a role — but the biggest factor was *opportunity*. I want to be part of the changes that are happening to the traditional roles of dental hygienists — after all, I chose this career initially because it was a new career choice for the time! Until the barriers to access are removed and direct access to care is a reality, survival in a free-standing practice will be a tremendous challenge. The first barrier is, of course,

money — many prospective clients have been unwilling or financially unable to be examined by a dentist to accommodate their dental hygiene care. The inability to direct bill to dental insurance companies, so clients are billed directly and are then reimbursed by their insurance companies, also negatively affects my chart count. These are obstacles we should all work to eliminate to help make it easier for those who face financial obstacles to receive both preventive care and complete dental care. It is important that the success of self-employed dental hygienists be seen to reflect our abilities, rather than whether the obstacles are removed.

Over the years, a satisfying career has been balanced with rewarding family roles — mother, mother-in-law and grandmother. Volunteering has been a second career — I have coached and refereed soccer, served six years on the Ledgeview Golf and Country Club Board of Directors, worked as a parent volunteer with the high school drama club, fundraised for the drama group, held positions as an executive member and fundraiser for a provincial riding association and as a director on my Strata Council, and, professionally, as past and current President of the Upper Fraser Valley Dental Hygienists' Society, a component of BCDHA.

At a recent luncheon the speaker said "those who say they can and those who say they cannot are both correct...but would those who say they cannot please get out of the way of those who are doing it". I always seem to be one of the ones who is "doing it".

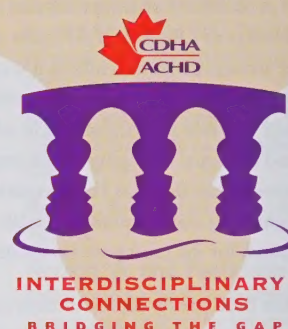
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Paula McAleese, Dental Hygienist, #111-32868 Ventura Avenue, Abbotsford, B.C., V2S 6J3, Telephone: (604) 850-3455 Facsimile: (604) 850-2488

CDHA NATIONAL Conference 1998

Preliminary Program



*AS OF OCTOBER 27, 1997

FRIDAY, JUNE 19

Pre-Conference Sessions

Legislation Workshop. Hosted by the Nova Scotia Dental Hygienists Association

Conference

1:00 - 1:15 **Opening Ceremonies**

A Royal Welcome to Prince Edward Island

1:15 - 1:45 **Introductory Address**

"Prince Edward Island: The Birthplace of Canada and Anne" by Dr. Epperley, President of Prince Edward Island University

2:00 - 4:00 **Panel Presentations and Discussion:** Setting the Interdisciplinary Stage "Interdisciplinary Approaches to Teaching, Research, and Service Through a Collaborative Model". Working in teams requires collaboration and the development of skills at working in groups. A panel chaired by Dr. L. Kraemer will address key questions and themes: What is interdisciplinary? What is collaboration? How can there be collaboration in research between practitioners and faculty? How can there be collaboration in education and service delivery? What are the commonalities? How does a model help us understand? What are some real examples of dental hygienists working in interdisciplinary teams?

Panelists

Linda Kraemer, Ph.D. (Panel Chair)
Senior Associate Dean
College of Health Professions
Thomas Jefferson University
Philadelphia, U.S.A.

Kevin Lyons, Ph.D.
Director
Center for Collaborative Research
Thomas Jefferson University
Philadelphia, U.S.A.

Maxine Borowko, R.D.H.
Fraser Valley and
Simon Fraser Health Regions
Abbotsford, B.C.

Sandra Cobban, R.D.H.
Program Development
Consultant
Aspen Regional Health
Authority
Morinville, Alberta

SATURDAY AND SUNDAY SESSIONS AND SPEAKERS

- Sandra Cobban, Dip. D.H. and Joanne Clovis, Dip. D.H., B.Ed., M.Sc.
"Linking Private Practice with the Community in Interdisciplinary Collaboration"
- Marilyn Kinnear, Dip. D.H., Lecturer, School of Dental Hygiene, Dalhousie University
"Seeking the Truth: Current Issues in Periodontics", lecture, and two workshops in "Advanced Hand Instrumentation" (attendance limited to 20 in each). A review of root anatomy will be followed by a demonstration and participant practice in the use of extra oral fulcrums and reinforced fulcrums to allow for throughout root debridement.
- Hardy Limeback, B.Sc., DDS, PhD., Professor, University of Toronto Faculty of Dentistry
"Fluoride - The Good, The Bad, and The Ugly"
"The Dental Hygienist's Answers to Questions About Toothpastes, Mouthwashes, and Whiteners"
- Maria Perno McKenzie, RDH, MS, President, American Dental Hygienists Association
"Women's Oral Health Issues"
"Women, Politics, and Cancer: Who is in Charge?"

In addition:

- Community Health Connections
- Corporate Speakers
- Meeting of the Dental Hygiene Educators Canada (DHEC)
- Free Papers: Saturday afternoon and Sunday morning
- Guest Speaker "The Business of Dental Hygiene"



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June 19-21, 1998 • Charlottetown, PEI



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The submission of abstracts for free papers, posters and table clinic presentations which are related to any aspect of dental hygiene practice are invited. **Your intent to submit an abstract, including your name and title of the abstract, must be made known to the CDHA Conference Coordinator by January 15, 1998.**

The deadline for submissions of abstracts (see Appendix A below) for free papers, posters and table clinics is March 1, 1998. Selection will be on the basis of the quality of abstracts. Notification of authors of accepted or rejected abstracts will be made by April 1, 1998. All selected abstracts will be published in the Conference Program.

Completed papers must be submitted by May 1, 1998 for potential publication in *Probe*, CDHA's scientific journal.

For additional information contact:

CDHA Central Office
96 CentrepoinTE Dr.
Nepean, ON K2G 6B1

Author should submit one copy of Appendix A (below) by **March 1, 1998.**

APPENDIX A FOR ABSTRACT

CDHA's 9th Professional Conference
*Interdisciplinary Connections:
Bridging the Gap*
Charlottetown, PEI • June 19-21, 1998

Deadline date for Abstracts:
March 1, 1998

First Author: _____
Affiliation: _____
Address: _____
City: _____ Prov./State: _____
Postal/Zip Code: _____
Telephone: Bus. () _____
Res. () _____
Additional Authors (Names only):

It is expected that first authors will present the papers unless otherwise specified.

Choice of Presentation Format

- ☐ Oral presentation (Free Paper)
☐ Poster presentation
☐ Table clinic

Abstracts should be submitted to:
CDHA Central Office
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Include title, purpose, method & results*

Large empty box for typing the abstract.



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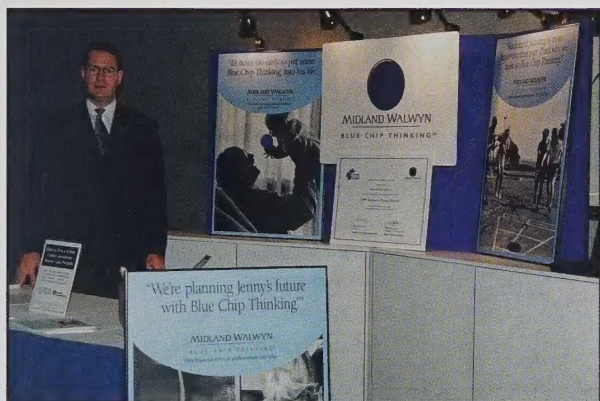
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A comfortable life in retirement doesn't happen by accident. It requires a commitment to planning, saving, and ongoing investment management. Taking stock of where you are today, contributing an annual amount of savings and getting solid investment advice are not tasks you should embark on alone. With sound advice from a Financial Advisor, you should be able to look into the future with peace of mind that you will be secure in your retirement years.

Today, people are spending more of their lifetime in retirement. Back in 1901, the average life expectancy was 48 years for men and 51 years for women. Consequently, our grandparents didn't pay much attention to retirement planning. Not only were life-expectancies shorter, but most people continued working right up until their final days. By 1971, men could expect to live to age 69 and women to age 76. By this time,

the average person was spending about 10 years in retirement, and company and government pension plans provided adequate financial security. Today, the average life expectancy is age 82 for men and age 85 for women. Can you afford to live this long?

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We offer a comprehensive benefit package and a smoke-free environment. Please send resumes by December 31, 1997, to: **Human Resources Consultant, Canadian Dental Hygienists Association, 96 Centrepoinette Drive, Nepean, Ontario K2G 6B1**

* Only those candidates considered for an interview shall be contacted. Interviews to be conducted in late January 1998, with an expectation of filling the position by the Spring of 1998.

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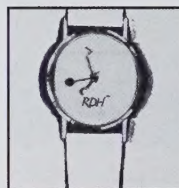
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NOTICE

ATTENTION CDHA/ODHA MEMBERS

Our mailing house has advised CDHA the *Disciplinary/Sexual Abuse Insurance Application* may have been included in certain CDHA/ODHA Membership Renewal packages. CDHA apologizes for any confusion this may have caused.

ERRATUM

The September/October edition of the *Probe* incorrectly identified the author of the Self-Assessment Test located on page 176.

The test was prepared and submitted by Harriet Rosenbaum, School of Dental Hygiene at the University of Manitoba. Ms. Rosenbaum has been involved in many different capacities of dentistry. She has been the Radiology Coordinator, Second-Year Coordinator, ortho module administrator, clinical instructor and lecturer. She works part-time in the graduate periodontal department at the University of Manitoba. She is also employed in private practice in Winnipeg at the Garden City Dental Centre. Ms. Rosenbaum has been involved in the item writing sessions for the N.D.H.C.B. She is a past president of M.D.H.A. and is the social chair for the up-coming 1999 CDHA Convention in Winnipeg.

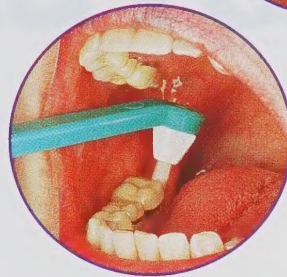
CDHA wishes to apologize for the error.

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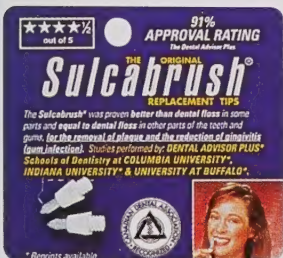
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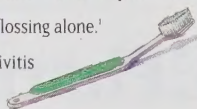


It's no secret that many people have trouble practicing proper dental care between check-ups. This of course, increases the chance



of gingivitis. But now with Listerine,* you can give your patients some additional help in the fight against gum disease. The fact is, Listerine has been proven to reduce the development of gingivitis¹ by almost 36% over brushing and flossing alone.²

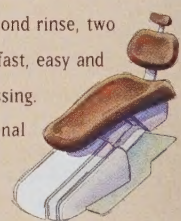
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* "Listerine helps reduce gingivitis (minor inflammation of the gums caused by plaque above the gumline) when used in a conscientiously applied program of oral hygiene and dental care." CANADIAN DENTAL ASSOCIATION[†]

LISTERINE ANTISEPTIC - ANTIPLAQUE ANTINGIVITIS - MOUTHWASH INDICATIONS: Helps reduce gingivitis (minor inflammation of the gums caused by plaque above the gumline) when used in a conscientiously applied program of oral hygiene and dental care. Kills the germs that cause bad breath, plaque, gingivitis and sore throats due to colds. CAUTIONS: Keep out of reach of children. Do not swallow. Not to be used by children under 12 years of age. In case of accidental ingestion, contact a Poison Control Centre or doctor immediately. DOSAGE: Rinse full strength with 20 mL for 30 seconds twice a day. MEDICINAL INGREDIENTS: Eucalyptol 0.091% w/v, Thymol 0.063% w/v, Menthol 0.042% w/v. NON-MEDICINAL INGREDIENT: Alcohol. NOTE: Cold temperatures may cloud this product, its efficacy will not be affected. SUPPLIED: Original Listerine: Clear, amber liquid available in bottles of 250, 500, 750, and 1,000 mL. Cool Mint Listerine: Clear, blue, cool mint flavoured liquid available in bottles of 250, 500, 750, and 1,000 mL. Fresh Burst Listerine: Clear, green, mint flavoured liquid available in bottles of 250, 500, 750, and 1,000 mL.

[†] Gingivitis was evaluated using the Modified Gingival Index. ^{††} TM Warner-Lambert Company/Warner-Wellcome Inc., Scarborough, Ontario M1L 2N3.
¹ Overholser CD et al. Comparative effects of two chemotherapeutic mouthrinses on the development of supragingival dental plaque and gingivitis. J Clin Periodontol 1990;17:575-579.
² Data on file, 1995.

PAAB

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